BOARD MEETING DATE: November 2, 2018 AGENDA NO. 29

PROPOSAL: Certify Revised Final Environmental Assessment and Amend Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

SYNOPSIS: Proposed Amended Rule (PAR) 1469 proposes new requirements to control hexavalent chromium-containing tanks that are currently not regulated. In addition, PAR 1469 establishes requirements for building enclosures, housekeeping and best management practices, periodic source testing, and parameter monitoring of pollution control equipment. PAR 1469 includes provisions for a revised chemical fume suppressant certification process that further considers toxicity and exposure, provisions to encourage the elimination of hexavalent chromium in Rule 1469 processes, and revisions to align Rule 1469 with the U.S. EPA National Emission Standards for Hazardous Air Pollutants for Chromium Electroplating. This action is to adopt the Resolution: 1) Certifying the Revised Final Environmental Assessment for Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations; and 2) Amending Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations.

COMMITTEE: Stationary Source, November 17, 2017, February 16, March 16, April 20, July 20, and October 19, 2018, Reviewed

RECOMMENDED ACTIONS:

Adopt the attached Resolution:

1. Certifying the Revised Final Environmental Assessment for Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations; and

2. Amending Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations.

Wayne Nastri
Executive Officer

SN:JW:DG:NF

Background

Rule 1169 – Hexavalent Chromium – Chrome Plating and Chromic Acid Anodizing was adopted on June 3, 1988 and applied to chromium electroplating (hard and decorative) and chromic acid anodizing processes. On October 9, 1998, Rule 1169 was repealed and provisions were incorporated into Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations. Rule 1469 establishes emission standards and housekeeping provisions for hexavalent chromium electroplating and chromic acid anodizing operations and implements the U.S. EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (Chrome Plating) and CARB's Airborne Toxic Control Measure (ATCM) for Chromium Plating and Chromic Acid Anodizing Facilities.

Staff initiated rulemaking activities for Proposed Amended Rule (PAR) 1469 following the discovery of uncontrolled heated sodium dichromate seal tanks that are part of the chromic acid anodizing process that contributed to high hexavalent chromium levels at ambient monitors near three chromic acid anodizing facilities in Newport Beach, Paramount, and Long Beach. In addition, all three facilities had cross-drafts that allowed emissions to flow out of the buildings housing these tanks, resulting in levels of hexavalent chromium as high as 26 ng/m^3 at monitors located downwind of a facility. Based on the Multiple Air Toxics Exposure Study IV, the average background level of hexavalent chromium (a potent known human carcinogen) is 0.06 ng/m^3 in the South Coast Air Basin.

PAR 1469 affects 115 facilities and has been developed to address heated sodium dichromate seal tanks and other tanks with similar operating properties that were not previously known to be sources of hexavalent chromium emissions. Hexavalent chromium is a toxic air contaminant and inhalation over a long period of time increases the risk of lung cancer and nasal cancer, and can worsen health conditions such as irritation of the nose, throat, and lungs. In addition, PAR 1469 will establish additional requirements such as building enclosures, enhanced housekeeping provisions, and best management practices to minimize the release of fugitive hexavalent chromium emissions. Over the past several years, staff has conducted ambient monitoring and emissions screening tests to identify high emitting tanks that are currently unregulated and uncontrolled. In addition, staff has identified issues with building openings that created cross-drafts that resulted high ambient levels of hexavalent chromium outside of facilities. Adoption of PAR 1469 is the last step in the process, and is needed to further reduce hexavalent chromium emissions and the impacts to surrounding communities. PAR 1469 also needed to incorporate the changes made to the U.S. EPA Chrome Plating NESHAP amended in September 2012.

Proposal

PAR 1469 establishes requirements for Tier I, II, and III Hexavalent Chromium Tanks. Tier III Hexavalent Chromium Tanks have the highest potential for hexavalent chromium emissions based on their temperature, hexavalent chromium concentration, and other operating parameters. Owners and operators are required to meet a specified emission standard which will require installation of add-on pollution controls for about 100 Tier III Hexavalent Chromium Tanks. Facilities will be required to operate Tier II and Tier III Hexavalent Chromium Tanks within a building enclosure that meets specific requirements, monitor specific parameters of air pollution controls, and to conduct periodic source tests of add-on air pollution control technologies every 5 years for facilities permitted for more than 1,000,000 ampere-hours, and every 7 years for facilities permitted for less than or equal to 1,000,000 ampere-hours. PAR 1469 also requires enhanced housekeeping measures and best management practices to minimize fugitive dust emissions of hexavalent chromium.

During the rulemaking process, concerns were raised that the recently certified non-perfluorooctane sulfonate (PFOS) chemical fume suppressants contain polyfluoroalkyl substances (PFAS) which have similar bio-accumulative toxicity issues to PFOS. Currently under existing Rule 1469, only the smallest facilities are allowed to use chemical fume suppressants as their sole control method as they are a low-cost option and reduce hexavalent chromium emissions by approximately 99 percent. Staff will be working with CARB to re-evaluate chemical fume suppressants taking into account the amount of the chemical fume suppressants that are emitted during plating and anodizing operations as well as the potential health effects. If it is determined that chemical fume suppressants cannot be certified, affected facilities will be required to install an alternative air pollution control technique such as add-on pollution controls by July 1, 2021. PAR 1469 includes a provision that allows the SCAQMD to identify and approve an alternative technology that would be equally effective at reducing hexavalent chromium emissions as chemical fume suppressants. This provision was added to PAR 1469 to allow for the development of a lower cost option, with no additional source testing, for smallest plating facilities in the event chemical fume suppressants are not certified.

PAR 1469 also includes a conditional provision for installation of a permanent total enclosure, provisions to encourage phasing out hexavalent chromium, and additional requirements for facilities near schools and sensitive receptors. Other provisions were incorporated to reflect changes in the U.S. EPA Chrome Plating NESHAP as well as provisions to improve the clarity and implementation of the rule. Obsolete provisions that are no longer applicable were deleted.

Public Process

PAR 1469 was developed through an extensive public process. A working group was formed to provide the public and stakeholders an opportunity to discuss important details about the proposed amendments to the rule and provide staff with input during the rule development process. The working group was composed of a variety of stakeholders including representatives from industry, consultants, environmental groups, community groups, and public agency representatives. During the rulemaking process, 13 working group meetings were held: March 23, 2017, May 18, 2017, June 29, 2017, August 2, 2017, August 31, 2017, September 20, 2017, in Compton on the evening of October 26, 2017, in Compton on the evening of November 29, 2017, January 4, 2018, February 6, 2018, February 27, 2018, April 4, 2018, and July 17, 2018. Working group meetings for this rulemaking were well attended with approximately 100 people in attendance per meeting and about 40 people participating via teleconference. In addition, three Public Workshops were held: November 1, 2017, December 7, 2017, and February 8, 2018. Two additional evening public informational meetings were also held on August 28, 2018 and August 29, 2018.

Key Issues

Through the rulemaking process staff has worked with stakeholders to resolve a number of issues while ensuring that PAR 1469 requires the installation of pollution controls for unregulated high-emitting hexavalent chromium tanks, the need for basic requirements for building enclosures, and the periodic monitoring of pollution controls. Throughout the rulemaking process, issues regarding non-hexavalent chromium alternatives were discussed. Two remaining key issues are (1) the use of non-PFOS chemical fume suppressants and (2) the economic impact of the rule.

Non-PFOS Chemical Fume Suppressants

Some environmental and community representatives have commented that non-PFOS chemical fume suppressants should be banned due to the potential health impacts. In addition, some industry stakeholders have commented that if non-PFOS chemical fume suppressants cannot be certified, installation of pollution controls may be too costly for smaller facilities and result in facility closures.

In response to environmental and community concerns, PAR 1469 incorporates a schedule to re-evaluate the certification of chemical fume suppressants and if they are not certified, facilities would be required to install pollution controls by July 1, 2021. Through the rule development process, this schedule has been compressed. July 1, 2021 is the earliest date which would allow sufficient time for staff to conduct emissions testing and certification, and allow facilities to design, permit, and install pollution controls, if necessary.

The Metal Finishing Association of Southern California has commented that if chemical fume suppressants are not certified, the cost to install air pollution controls would significantly impact the smallest plating facilities and potentially result in facility closures. In response to these concerns, a provision has been added that if chemical fume suppressants are not certified, the Executive Officer in consultation with CARB may approve an alternative to a chemical fume suppressant that is as equally effective as a previously certified chemical fume suppressant. The objective of this provision is to provide a lower cost solution where the SCAQMD would conduct the emissions testing. Also, similar to the use of certified chemical fume suppressants, no further emissions testing would be required if the operator complies with the conditions approved for the alternative. Additionally, staff has committed to seeking funding sources to help facilities with the installation of add-on air pollution control devices or transition to non-toxic alternatives, where feasible. Staff will also continue to participate in CARB's rulemaking to amend the ATCM for chromium plating and anodizing, and support a statewide effort to phase-out the use of hexavalent chromium in chromium plating and chromic acid anodizing.

Economic Impacts of PAR 1469

Throughout the rule development process, industry stakeholders commented that the costs to comply with the proposed rule amendments are significant. Staff worked with industry stakeholders and made modifications throughout the rule development process to minimize facility costs while maintaining the key provisions to control hexavalent chromium emissions from high emitting tanks. Provisions such as reducing the frequency of periodic source tests, increasing the percentage of allowable openings for the building enclosure, and adding an intermediate Tier II tank that can use lower cost control techniques to reduce hexavalent chromium emissions to lower the compliance costs.   Since the September 2018 Public Hearing, staff added a provision that does not require add-on pollution control devices for small, low-use tanks that meet specific conditions to ensure these tanks will meet the same emission limits as Tier III tanks with add-on pollution control devices. As discussed in the Socioeconomic Impact Assessment, the majority of costs are associated with the installation and operation of add-on air pollution control devices for uncontrolled sources of hexavalent chromium at chromic acid anodizing facilities. One of the areas of greatest concern is the potential cost of installation of add-on air pollution control devices to small decorative plating and anodizing facilities that are currently using chemical fume suppressants. As discussed above, if the chemical fume suppressants are not certified, staff is committed to finding low-cost alternatives or funding for these smaller facilities.

AQMP and Legal Mandates

The SCAQMD is required to adopt an AQMP demonstrating compliance with all federal regulations and standards. The SCAQMD is required to adopt rules and regulations that carry out the objectives of the AQMP. PAR 1469 is not a control measure of the 2016 AQMP but is needed to reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing facilities. PAR 1469 will continue to implement requirements of the CARB ATCM pursuant to Health and Safety Code Section 39666(d) and U.S. EPA's NESHAP promulgated pursuant to Clean Air Act Section 112 (42 U.S.C. § 7412).

California Environmental Quality Act

PAR 1469 is considered to be a "project" as defined by the California Environmental Quality Act (CEQA). CEQA requires the evaluation of potentially adverse environmental impacts of proposed projects and the application of feasible methods to reduce or avoid significant adverse environmental impacts of these projects. PAR 1469 is expected to create an environmental benefit by reducing emissions of toxic air contaminants. The activities that site operators may undertake to comply with PAR 1469 may also create secondary adverse environmental impacts, but not at a significant level. Thus, pursuant to CEQA Guidelines Section 15252 and SCAQMD Rule 110, the SCAQMD has prepared an Environmental Assessment (EA) with less than significant impacts for PAR 1469. Since the environmental analysis in the Draft EA concluded that PAR 1469 would not generate any significant adverse environmental impacts, no alternatives or mitigation measures are required.

The Draft EA was released for a 32-day public review and comment period from February 16, 2018 to March 20, 2018. Two comment letters were received during the public comment period on the analysis in the Draft EA, and the comment letters and responses were included in Appendix E of the Final EA, which was released as part of the Governing Board package for the first Public Hearing on September 7, 2018. Since the release of the Draft EA, modifications were made to the proposed project in response to verbal and written comments which are reflected in the Final EA. Further, subsequent to the release of the Final EA, some modifications were made to PAR 1469 which are reflected in the Revised Final EA.

Staff has reviewed the modifications to the proposed project and concluded that none of the modifications constitute significant new information, or a substantial increase in the severity of an environmental impact, or provide new information of substantial importance regarding the Draft EA, Final EA, or Revised Final EA. In addition, revisions to PAR 1469 in response to verbal and written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Draft EA pursuant to CEQA Guidelines Section 15073.5 or 15088.5. Therefore, the Draft EA and Final EA has been revised to reflect the aforementioned modifications and to include the comment letters and responses to comments such that it is now the Revised Final EA (see Attachment I). Prior to making a decision on PAR 1469, the Board must review and certify the Revised Final EA as providing adequate information on the potential adverse environmental impacts of the proposed project.

Socioeconomic Assessment

PAR 1469 would affect 115 facilities that either conduct decorative or hard chromium electroplating or chromic acid anodizing within SCAQMD's jurisdiction. Two cost scenarios were analyzed; a high cost scenario, which represents the highest expected cost of compliance, and a low cost scenario, which represents the costs associated with a more likely scenario. The affected facilities would incur an average annual aggregate cost totaling $2.65 to $4.26 million to comply with proposed requirements within the low and high cost scenarios, respectively. The majority of the compliance costs are capital, installation, and operating and maintenance costs of air pollution control systems. The average annual cost per facility is estimated at $22,000 to $36,000 (for the low and high cost scenarios, respectively).

Examination of facility-specific annual cost/revenue impacts indicates an average annual compliance cost impact of 1.8 percent to 3.3 percent of annual revenue for all facilities. Staff worked with a contractor hired by the Metal Finishing Association of Southern California to develop the cost assumptions. The facility category which bears the greatest impact is small decorative plating facilities, which has a range of average cost impacts of 3.4 percent to 7.4 percent of revenue. Many of these facilities could be significantly impacted by PAR 1469 if chemical fume suppressants are not certified and they are required to install air pollution control systems. SCAQMD may approve an alternative technology that would be equally effective as the emission limit required for chemical fume suppressants, and the provision would mitigate costs for the small facilities. Such an alternative may include a combination of mechanical fume suppressants and other measures.

PAR 1469 is expected to result in an average of 37 to 63 to jobs forgone annually, between 2019 and 2035 using the low and high cost scenarios, respectively. The projected jobs forgone represent about 0.001 percent of the total employment in the four-county region.

Implementation and Resource Impact
Existing SCAQMD resources will be used to implement PAR 1469.

Attachments
A. Summary of Proposal
B. Key Issues and Responses
C. Rule Development Process
D. Key Contacts List
E. Resolution
F. Proposed Amended Rule 1469 Rule Language
G. Proposed Amended Rule 1469 Staff Report
H. Final Socioeconomic Impact Assessment
I. Revised Final Environmental Assessment
J. Board Meeting Presentation

ATTACHMENT A

SUMMARY OF PROPOSAL

Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations
<u>Emission Standards for Tier III Hexavalent Chromium Tanks</u> ▪ Maintain existing hexavalent chromium emission standards for plating and anodizing tanks ▪ New emission limits for Tier III Hexavalent Chromium Tanks (highest emitting tanks): o Same emission limits for electrolytic process tanks; o 0.20 mg/hr if maximum exhaust rate is 5,000 cfm or less; or o 0.004 mg/hr-ft^2 if maximum exhaust rate is greater than 5,000 cfm ▪ Special provisions for small, low-use Tier III Hexavalent Chromium Tanks that meet specific criteria <u>Periodic Source Testing Requirements</u> ▪ Requires source testing every 60 months (5 years) if total facility permitted throughput is greater than 1,000,000 ampere-hours annually ▪ Requires source testing every 84 months (7 years) if total facility permitted throughput is less than or equal to 1,000,000 ampere-hours annually ▪ Allows use of an emissions screening test consisting of a one-run source test <u>Building Enclosure Requirements</u> ▪ Requires that Tier II and III Hexavalent Chromium Tanks be operated in a building enclosure ▪ Limits combined area for all enclosure openings to 3.5% of the building envelope ▪ Requirements to minimize cross-drafts, openings near sensitive receptors, and roof openings <u>Conditional Requirements for Permanent Total Enclosure</u> ▪ Trigger to install a permanent total enclosure based on more than one non-passing source test or failure to shut down a tank after a failed smoke test or failed slot velocity test ▪ Trigger is more stringent for facilities within 1,000 feet of a sensitive receptor <u>Housekeeping Requirements</u> ▪ Added housekeeping requirements for buffing, grinding, or polishing areas and provisions when cutting into roof surfaces ▪ Provision to remove fabric or fibrous flooring material that cannot be cleaned <u>Best Management Practices</u> ▪ Incorporates new best management practices for spray rinsing parts or equipment, tank labeling, provisions for buffing, grinding and polishing, and additional clarifications <u>Certification of Wetting Agent Chemical Fume Suppressants</u> ▪ Incorporates provisions from U.S. EPA's Chromium Plating NESHAP which bans PFOS from chemical fume suppressants ▪ Incorporates a schedule to re-evaluate certification of chemical fume suppressants ▪ If chemical fume suppressants are not certified, operators must install pollution controls by July 1, 2021 and are allowed to use a chemical fume suppressant on or before July 1, 2022 if phasing out use of hexavalent chromium o Incorporates provision for staff in consultation with CARB to approve an alternative to a chemical fume suppressant that is equally effective as chemical fume suppressants, if chemical fume suppressants are not certified

Parameter Monitoring

- Monitor the operation of an add-on air pollution control device including the collection slot velocities and push air manifold pressure conditions
- Additional parameter monitoring required for air pollution control device equipped with HEPA

Other Provisions

- Provisions to encourage phase-out of hexavalent chromium
- Additional provisions for inspection and maintenance
- Clarifies and adds recordkeeping requirements for add-on air pollution control devices
- Remove exemption for process tanks associated with plating or anodizing processes
- Includes a process for a one year extension to install add-on air pollution controls, implement an approved alternative compliance method, or implement an approved Hexavalent Chromium Phase-Out Plan

ATTACHMENT B
KEY ISSUES AND RESPONSES

Proposed Amended Rule (PAR) 1469 ─ Hexavalent Chromium Emissions From Chromium Electroplating And Chromic Acid Anodizing Operations
<u>Use of non-PFOS chemical fume suppressants:</u> Some environmental and community representatives have commented that the non-PFOS chemical fume suppressants should be banned due to the potential health impacts. Additionally, some industry stakeholders have commented that if non-PFOS chemical fume suppressants cannot be certified, installation of pollution controls may be too costly for the smaller facilities and will result in facility closures. • A schedule has been incorporated into the rule for staff to re-evaluate the certification of chemical fume suppressants and if not certified, facilities would be required to install air pollution controls by July 1, 2021. This date provides the time necessary to conduct emissions testing, certify wetting agent chemical fume suppressants (if any), and allow facilities to design, permit, and install air pollution controls, if needed. • If a chemical fume suppressant is not certified, the Executive Officer in consultation with CARB may approve an alternative to a chemical fume suppressant that is as equally effective as a previously certified chemical fume suppressant. • The alternative to a chemical fume suppressant would provide a lower cost solution since the SCAQMD would identify the control options and conduct the emissions testing. Also, no further emissions testing would be required if the operator complies with the conditions for the alternative. <u>Economic impact of implementation of Proposed Amended Rule 1469:</u> Some industry stakeholders have commented that the cost to comply with the rule is substantial and would result in facility closures in the South Coast Air Basin. • As identified in the Socioeconomic Impact Assessment, the majority of costs are associated with the installation and operation of add-on air pollution control devices for previously uncontrolled tanks that were identified as sources of hexavalent chromium emissions. Staff added a provision that does not require add-on pollution control devices for small, low-use tanks that meet specific conditions that ensure the same emission levels as Tier III Tanks with add-on pollution control devices. The Metal Finishing Association of Southern California has commented that pollution controls are needed for Tier III Tanks. • Throughout the rulemaking process, staff worked with stakeholders to reduce the cost of Proposed Amended Rule 1469 by extending the schedule for source testing, including Tier II Tanks which do not require pollution controls but can use lower cost techniques to reduce hexavalent chromium emissions, and modifications to building enclosure requirements, to name a few. • Owners or operators of facilities are not limited to installing add-on air pollution control devices as they can either reduce or eliminate hexavalent chromium use from the subject tank. By reducing the concentration of hexavalent chromium, the tank may be classified as Tier II Hexavalent Chromium Tank instead of Tier III Hexavalent Chromium Tank. Tier II Hexavalent Chromium Tanks have fewer requirements and do not need an add-on air pollution control device.

ATTACHMENT C
RULE DEVELOPMENT PROCESS

Proposed Amendment to Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

Initiated Rule Development: July 2015

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Working Group Meetings (13):

March 23, 2017
May 18, 2017
June 29, 2017
August 2, 2017
August 31, 2017
September 20, 2017
October 26, 2017
November 29, 2017
January 4, 2018
February 6, 2018
February 27, 2018
April 4, 2018
July 12, 2018

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75-Day Public Notice: December 16, 2017

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Public Workshops (3):
November 1, 2017
December 7, 2017
February 8, 2018

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Stationary Source Committee Briefings (6):
November 17, 2017
February 16, 2018
March 16, 2018
April 20, 2018
July 20, 2018
October 19, 2018

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1st Set Hearing (120-day): May 4, 2018

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1st 30-day Notice of Public Hearing: August 8, 2018

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Informational Meetings (2):
August 28, 2018
August 29, 2018

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1st Public Hearing: September 7, 2018

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2nd Set Hearing: October 5, 2018

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2nd 30-day Notice of Public Hearing: October 3, 2018

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2nd Public Hearing: November 2, 2018

Thirty-nine (39) months spent in rule development
Three (3) Public Workshops
Thirteen (13) Working Group Meetings, including two (2) evening Working Group Meetings in Compton.

ATTACHMENT D

KEY CONTACTS LIST

AAA Plating & Inspection

Accurate Plating

Ace Clearwater

Aircraft X-Ray Labs Inc.

Alco Plating

All Metals Processing

Almega Environmental

Alta Environmental

Anaplex Corporation

Atotech USA Inc.

Aviation Repair Solution

Barry Avenue Plating

Best Air Controls

The Boeing Company

Bowman Plating Co.

California Air Resources Board

California Communities Against Toxics

California Electroplating Inc.

California OSHA (Cal/OSHA)

California Safe Schools

California Small Business Alliance

City of Paramount

Chromal Plating Company

CNC Environmental

Coast Plating

Del Amo Action Committee

Department of Public Works Bureau of Sanitation

Desmond & Desmond

Dixon Hard Chrome

Ducommun

Dynamic Plating

Ecotek

Electrolizing

ECM

E.M.E.

Environomics Embee Processing

Gardena Specialized Plating

General/Brite Plating Company

Hawker Pacific Aerospace

Hixson Metal Finishing

Hightower Plating

Hunter Chemical LLC

K&L Anodizing

MacDermid Enthone

Metal Finishing Association of Southern California

Metal Finishing Marketers

Metal Surfaces Inc.

Michelle Lewis

Montrose

Moore Compliance & Training Inc.

Morrell's Electroplating

Omni Metal

OC Plating

Office of Environmental Health Hazard Assessment

Pentrate Metal Processing

Policy Group

Precision Anodizing and Plating

Products Engineering Corporation

Quaker City Plating

Radcliff & Saiki LLP

Radtech

Size Control Plating

Southern California Air Quality Alliance

Southland Environmental

Sunvair

Teachers Association of Paramount

Tool & Jig

Tox Strategies

Triumph Processing

Trinity Consultant

Universal Metal Plating

Valley Plating

Verne’s Chrome

ATTACHMENT E

RESOLUTION NO. 18-_____

A Resolution of the Governing Board of the South Coast Air Quality Management District (SCAQMD) certifying the Revised Final Environmental Assessment (EA) for Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations.

A Resolution of the SCAQMD Governing Board Adopting Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations.

WHEREAS, the SCAQMD Governing Board finds and determines with certainty that Proposed Amended Rule 1469 is considered a "project" as defined by the California Environmental Quality Act (CEQA); and

WHEREAS, the SCAQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l), and has conducted a CEQA review and analysis of Proposed Amended Rule 1469 pursuant to such program (SCAQMD Rule 110); and

WHEREAS, the SCAQMD staff has prepared a Draft EA pursuant to its certified regulatory program and CEQA Guidelines Sections 15251, 15252, and 15070, setting forth the potential environmental consequences of Proposed Amended Rule 1469 and determined that the proposed project would not have the potential to generate significant adverse environmental impacts; and

WHEREAS, the Draft EA was circulated for a 32-day public review and comment period, from February 16, 2018 to March 20, 2018, and two comment letters were received; and

WHEREAS, the Draft EA has been revised to include comments received on the Draft EA and the responses, which were included in the Final EA and released as part of the Governing Board package for the first Public Hearing on September 7, 2018. Subsequent to the release of the Final EA, some modifications were made to Proposed Amended Rule 1469 which are reflected in the Revised Final EA; and

WHEREAS, it is necessary that the SCAQMD Governing Board review the Revised Final EA prior to its certification, to determine that it provides adequate information on the potential adverse environmental impacts that may occur as a result of adopting Proposed Amended Rule 1469, including responses to comments received relative to the Draft EA; and

WHEREAS, pursuant to CEQA Guidelines Section 15252 (a)(2)(B), since no significant adverse impacts were identified, no alternatives or mitigation measures are required and thus, a Mitigation Monitoring and Reporting Plan pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097, has not been prepared; and

WHEREAS, findings pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15091, and a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093, were not prepared because the analysis shows that Proposed Amended Rule 1469 would not have a significant adverse effect on the environment, and thus, are not required; and

WHEREAS, the SCAQMD Governing Board voting to adopt Proposed Amended Rule 1469 has reviewed and considered the information contained in the Revised Final EA and other supporting documentation, prior to its certification, and has determined that the Revised Final EA, including responses to comments, has been completed in compliance with CEQA; and

WHEREAS, Proposed Amended Rule 1469 and supporting documentation, including but not limited to, the Revised Final EA, the Final Staff Report, and the September 7, 2018 Board Letter, were presented to the SCAQMD Governing Board and the SCAQMD Governing Board has reviewed and considered this information, and has taken and considered staff testimony and public comment prior to approving the project; and

WHEREAS, the Revised Final EA reflects the independent judgment of the SCAQMD; and

WHEREAS, the SCAQMD Governing Board finds and determines that all changes made in the Revised Final EA after the public notice of availability of the Draft EA and the Final EA, were not substantial revisions and do not constitute significant new information within the meaning of CEQA Guidelines Section 15073.5 or 15088.5, because no new significant effects were identified, and no new project conditions or mitigation measures were added, and all changes merely clarify, amplify, or make insignificant modifications to the Draft EA and the Final EA, and recirculation is therefore not required; and

WHEREAS, the SCAQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures (codified as Section 30.5(4)(D)(i) of the Administrative Code), that the modifications which have been made to Proposed Amended Rule 1469 since the notice of public hearing was published adds clarity and a provision in Appendix 10 that does not require hexavalent chromium tanks with a surface area smaller than 4 square feet that are used less than 2.5 hours per week within a specified temperature range to install add-on air pollution controls because their highest potential emissions would be the same as the potential emissions of a larger, higher use tank that is required to install add-on air pollution controls and this provision meets the same air quality objective and is not so substantial as to significantly affect the meaning of the proposed amended rule within the meaning of Health and Safety Code 40726 because: (a) the changes do not impact emission reductions because the highest potential hexavalent chromium emissions would be similar and the rule does not take credit for or quantify emission reductions, (b) the changes do not affect the number or type of sources regulated by the rule and the change would mean compliance with the rule would be less costly for facilities, (c) the changes are consistent with the information contained in the notice of public hearing, and (d) the consideration of the range of CEQA alternatives is not applicable because the effects of Proposed Amended Rule 1469 do not cause significant impacts and therefore, alternatives are not required; and

WHEREAS, Proposed Amended Rule 1469 is not a control measure in the 2012 Air Quality Management Plan (AQMP) and was not ranked by cost-effectiveness relative to other AQMP control measures in the 2016 AQMP, and furthermore, pursuant to Health and Safety Code Section 40910, cost-effectiveness in terms of dollars per ton of pollutant reduced is only applicable to rules regulating ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide and does not apply to toxic air contaminants; and

WHEREAS, Proposed Rule 1469 reduces hexavalent chromium emissions which is a toxic air contaminant and will not be submitted for inclusion into the State Implementation Plan; and

WHEREAS, the SCAQMD staff conducted public workshops regarding Proposed Amended Rule 1469 on November 1, 2017, December 7, 2017, and February 8, 2018; and

WHEREAS, Health and Safety Code Section 40727 requires that prior to adopting, amending, or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the Final Staff Report; and

WHEREAS, the SCAQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from Health and Safety Code Sections 39002, 39650 et. seq., 40000, 40440, 40441, 40702, 41508, and 41700; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1469 is written or displayed so that its meaning can be easily understood by the persons directly affected by it; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1469, as proposed to be adopted, is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1469, as proposed to be adopted, implements the state Air Toxics Control Measure (ATCM) 17 CCR 93102-93102.16 and federal National Emission Standards for Hazardous Air Pollutants 40 CFR Part 63, Subpart N for chromium plating and anodizing facilities and imposes the same or more stringent requirements as the existing state or federal regulations, and the proposed project is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD; and

WHEREAS, the SCAQMD Governing Board has determined that a need exists to amend Rule 1469 to alleviate a problem by establishing emission limits to address tanks containing hexavalent chromium that operate under conditions that previously were not known to be significant sources of hexavalent chromium emissions and to establish additional provisions that minimize the release of hexavalent chromium emissions from electroplating and chromic acid anodizing operations and associated processes; and

WHEREAS, the SCAQMD Governing Board, in adopting this regulation, references the following statutes which the SCAQMD hereby implements, interprets or makes specific: the provisions of the Health and Safety Code Section 41700 (nuisance) and Section 39666 (Airborne Toxic Control Measures) and Federal Clean Air Act Section 112 (Hazardous Air Pollutants) and Section 116 (Retention of State Authority); and

WHEREAS, Health and Safety Code Section 40727.2 requires the SCAQMD to prepare a written analysis of existing federal air pollution control requirements applicable to the same source type being regulated whenever it adopts, or amends a rule, and that the SCAQMD's comparative analysis of Proposed Amended Rule 1469 is included in the Final Staff Report; and

WHEREAS, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment of Proposed Amended Rule 1469 is consistent with the March 17, 1989 Governing Board Socioeconomic Resolution for rule adoption; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1469 will result in increased costs to chromium electroplating and chromic acid anodizing facilities yet are considered to be reasonable, with a total annualized cost as specified in the Socioeconomic Impact Assessment; and

WHEREAS, the SCAQMD Governing Board has considered the Socioeconomic Impact Assessment and has made a good faith effort to minimize such impacts; and

WHEREAS, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment is consistent with the provisions of the Health and Safety Code Sections 40440.8, 40728.5, 40920.6; and

WHEREAS, the SCAQMD Governing Board specifies the Manager overseeing the rule development for Proposed Amended Rule 1469 as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed project is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

WHEREAS, a public hearing has been properly noticed in accordance with all provisions of Health and Safety Code Section 40725; and

WHEREAS, the SCAQMD Governing Board has held a public hearing in accordance with all provisions of law.

NOW, THEREFORE BE IT RESOLVED, the SCAQMD Governing Board directs staff to continue to investigate non-toxic alternatives to hexavalent chromium that can be used in electroplating and chromic acid anodizing operations and associated processes; and

BE IT FURTHER RESOLVED, the SCAQMD Governing Board directs staff to initiate a pilot study to identify non-toxic alternatives to hexavalent chromium plating and anodizing operations and to provide a report to the Stationary Source Committee within two years on possible non-toxic alternatives and rule changes, if any; and

BE IT FURTHER RESOLVED, the SCAQMD Governing Board directs staff to continue participating in CARB's rulemaking to amend the ATCM for chromium plating and anodizing and to support a statewide effort to phase-out the use of hexavalent chromium in chromium plating and chromic acid anodizing operations; and

BE IT FURTHER RESOLVED, if non-PFOS chemical fume suppressants are not re-certified, the SCAQMD Governing Board directs staff to work with CARB to identify a low-cost compliance option that is as equally effective as chemical fume suppressants and to seek funding to assist facilities in installation of pollution controls or use of non-toxic alternatives, where feasible; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board directs staff to return to the Stationary Source Committee within 12 months to provide an update on implementation of Amended Rule 1469;

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby certify the Revised Final EA for Proposed Amended Rule 1469 was completed in compliance with CEQA and SCAQMD Rule 110 provisions; and finds that the Revised Final EA, including responses to comments, was presented to the SCAQMD Governing Board, whose members reviewed, considered and approved the information therein prior to acting on Proposed Amended Rule 1469; and

BE IT FURTHER RESOLVED, that because no significant adverse environmental impacts were identified as a result of implementing Proposed Amended Rule 1469, Findings pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15091, a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093, and a Mitigation Monitoring and Reporting Plan pursuant to Public Resource Code Section 21081.6 and CEQA Guidelines Section 15097 are not required; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Amended Rule 1469 as set forth in Attachment F and incorporated herein by this reference.

DATE: ___________________ ___________________________

CLERK OF THE BOARDS

ATTACHMENT F

(Adopted October 9, 1998)(Amended May 2, 2003)
(Amended December 5, 2008)(PAR 1469 November 2, 2018)

PROPOSED AMENDED RULE 1469. HEXAVALENT CHROMIUM EMISSIONS FROM CHROMIUM ELECTROPLATING AND CHROMIC ACID ANODIZING OPERATIONS

(a) Purpose

The purpose of this rule is to reduce hexavalent chromium emissions from facilities that perform chromium electroplating or chromic acid anodizing operations and other activities that are generally associated with chromium electroplating and chromic acid anodizing operations.

(~~a~~b) Applicability

~~(1)~~ This rule shall apply to the owner or operator of any facility performing chromium electroplating or chromic acid anodizing.~~ Compliance with this rule shall be in addition to other applicable rules, such as Rule 1401 – New Source Review of Toxic Air Contaminants and Rule 1401.1 – Requirements for New and Relocated Facilities Near Schools.~~

~~(2) Any person who sells, supplies, offers for sale, uses, or manufactures for sale in the District a chromium electroplating or chromic acid anodizing kit.~~

(~~b~~c) Definitions

For the purposes of this rule, the following definitions shall apply:

(c) (1) ADD-ON AIR POLLUTION CONTROL DEVICE means equipment installed in the ventilation system of ~~chromium electroplating and anodizing tanks~~ any Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s) for the purposes of collecting and containing chromium emissions from the tank(s).

(c) (2) ADD-ON NON-VENTILATED AIR POLLUTION CONTROL DEVICE means equipment installed on any Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s) for the purposes of collecting, containing, or eliminating chromium emissions that is hermetically sealed and does not utilize a ventilation system.

(c) (~~2~~3) AIR POLLUTION CONTROL TECHNIQUE means any method, such as an add-on air pollution control device, add-on non-ventilated air pollution control device, mechanical fume suppressant or a chemical fume suppressant, that is used to reduce chromium emissions from one or more

Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s)~~chromium electroplating and chromic acid anodizing tanks~~.

(c) (~~3~~4) AMPERE-HOURS means the integral of electrical current applied to an electroplating tank (amperes) over a period of time (hours).

(c) (~~4~~5) ANNUAL PERMITTED AMPERE-HOURS means the maximum allowable chromium electroplating or anodizing rectifier production in ampere-hours, on an annual basis as specified in the SCAQMD Permit to Operate, or SCAQMD Permit to Construct~~, or Compliance Plan for the facility~~.

(c) (6) APPROVED CLEANING METHOD means cleaning using a wet mop, damp cloth, wet wash, low pressure spray nozzle, HEPA vacuum, or other method as approved by the Executive Officer.

(c) (7) ASSOCIATED PROCESS TANK means any tank in the process line of a Tier I, Tier II, or Tier III Hexavalent Chromium Tank.

~~(5)~~ ~~AREA SOURCE means any stationary source of hazardous air pollutants that is not a major source as defined in this rule.~~

(c) (~~6~~8) BASE MATERIAL means the metal, metal alloy, or plastic that comprises the workpiece.

(c) (9) BARRIER means a physical divider that can be fixed or portable such as a wall, welding screen, plastic strip curtains, etc.

(c) (~~7~~10) BATH COMPONENT means the trade or brand name of each component in trivalent chromium electroplating baths, including the chemical name of the wetting agent contained in that component.

~~(8)~~ ~~BREAKDOWN means an unforeseeable impairment of an air pollution control device or related operating equipment which causes a violation of any emission limitation or restriction prescribed by this rule or by State law and which: is not the result of neglect or disregard of any air pollution control law, rule, or regulation; is not intentional or the result of negligence, or improper maintenance; is not a recurrent breakdown of the same equipment; and, does not constitute a nuisance as defined in the State of California Health and Safety Code, Section 41700, with the burden of proving the criteria of this section placed upon the person seeking to come under the provisions of this law.~~

(c) (11) BUILDING ENCLOSURE means a permanent building or physical structure, or portion of a building, enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with limited openings to allow access for people, vehicles, equipment, or parts. A room within a building enclosure that is completely enclosed with a floor, walls, and a roof would also meet this definition.

(c) (~~9~~12) CHEMICAL FUME SUPPRESSANT means any chemical agent that reduces or suppresses fumes or mists at the surface of an electroplating or anodizing bath; another term for fume suppressant is mist suppressant.

(c) (~~10~~13) CHROMIC ACID means the common name for chromium anhydride (CrO_3).

(c) (~~11~~14) CHROMIC ACID ANODIZING means the electrolytic process by which an oxide layer is produced on the surface of a base material for functional purposes (e.g., corrosion resistance or electrical insulation) using a chromic acid solution. In chromic acid anodizing, the part to be anodized acts as the anode in the electrical circuit, and the chromic acid solution, with a concentration typically ranging from 50 to 100 grams per liter (g/L), serves as the electrolyte.

(c) (~~12~~15) CHROMIUM ELECTROPLATING OR CHROMIC ACID ANODIZING TANK means the receptacle or container in which hard or decorative chromium electroplating or chromic acid anodizing occurs.

(c) (~~13~~16) COMPOSITE MESH-PAD SYSTEM (CMP) means an add-on air pollution control device typically consisting of several mesh-pad stages. The purpose of the first stage is to remove large particles. Smaller particles are removed in the second stage, which consists of the composite mesh pad. A final stage may remove any re-entrained particles not collected by the composite mesh pad.

(c) (~~14~~17) DECORATIVE CHROMIUM ELECTROPLATING means the process by which a thin layer of chromium (typically 0.003 to 2.5 microns) is electrodeposited on a base metal, plastic, or undercoating to provide a bright surface with wear and tarnish resistance. In this process, the part(s) serves as the cathode in the electrolytic cell and the solution serves as the electrolyte. Typical current density applied during this process ranges from 540 to 2,400 Amperes per square meter (A/m^2) for total electroplating times ranging between 0.5 to 5 minutes.

(c) (~~15~~18) DRAGOUT means fluid containing hexavalent chromium that drips ~~off~~ from ~~parts being~~ electroplated or anodized parts, or from equipment used to remove electroplated or anodized parts from a tank.

(c) (~~16~~19) ELECTROPLATING OR ANODIZING BATH means the electrolytic solution used as the conducting medium in which the flow of current is accompanied by movement of metal ions for the purpose of electroplating metal out of the solution onto a workpiece or for oxidizing the base material.

(c) (~~17~~20) EMISSION LIMITATION means~~, for the purposes of this rule,~~ the concentration of total chromium allowed to be emitted expressed in milligrams per dry standard cubic meter (mg/dscm), or the allowable surface tension expressed in dynes per centimeter (dynes/cm) for decorative chromium electroplating and chromic acid anodizing tanks; and the milligrams of hexavalent chromium per ampere-hour (mg/amp-hr) of electrical current applied to the electroplating tank for hard or decorative chromium electroplating tanks or chromic acid anodizing tanks, or mass emission rate for a Tier II or Tier III hexavalent chromium tank.

(c) (~~18~~21) ENCLOSED STORAGE AREA is any space or structure used to contain material that prevents its contents from being emitted into the atmosphere.

(c) (22) ENCLOSURE OPENING is any permanent opening that is designed to be part of a building enclosure or permanent total enclosure, such as passages, doorways, bay doors, vents, roof openings, and windows. The term excludes openings that are designed to accommodate and generally conform to a stack or duct for a building enclosure or permanent total enclosure.

(c) (~~19~~23) EXISTING FACILITY means a facility that is in operation before October 24, 2007.

(c) (~~20~~24) FACILITY means a~~the major or area~~ source ~~at which chromium electroplating or chromic acid anodizing is performed and/or any source or group of sources or other air contaminant-emitting activities which are~~ located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in 40 CFR Section 55.2. Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility. Sources or installations involved in crude oil and gas production in Southern California Coastal or OCS Waters and transport of such crude oil and gas in Southern California Coastal or OCS Waters shall be included in the same facility which is under the same ownership or use entitlement as the crude oil and gas production facility on-shore.

(c) (~~21~~25) FIBER-BED MIST ELIMINATOR means an add-on air pollution control device that removes contaminants from a gas stream through the mechanisms of inertial impaction and Brownian diffusion. This device consists of one or more fiber beds and is typically installed downstream of another control device, which serves to prevent plugging~~, and consists of one or more fiber beds~~. Each bed consists of a hollow cylinder formed from two concentric screens; the fiber between the screens may be fabricated from glass, ceramic, plastic, or metal.

(c) (~~22~~26) FOAM BLANKET means the type of chemical fume suppressant that generates a layer of foam across the surface of a solution when current is applied to that solution.

(c) (~~23~~27) FRESH WATER means water, such as tap water, that has not been previously used in a process operation or, if the water has been recycled from a process operation, it has been treated and meets the effluent guidelines for chromium wastewater.

(c) (~~24~~28) FUGITIVE EMISSIONS~~DUST, for the purpose of this rule~~ means ~~any~~ emissions generated from the operations at a facility, including solid particulate matter, gas, or mist, potentially containing hexavalent chromium that becomes airborne by natural or man-made activities, excluding particulate matter emitted from an exhaust stack.

(c) (~~25~~29) HARD CHROMIUM ELECTROPLATING or INDUSTRIAL CHROMIUM ELECTROPLATING means a process by which a thick layer of chromium (typically greater than 1.0 microns) is electrodeposited on a base material to provide a surface with functional properties such as wear resistance, a low coefficient of friction, hardness, and corrosion resistance. In this process, the part serves as the cathode in the electrolytic cell and the solution serves as the electrolyte. Hard chromium electroplating process is performed at current densities typically ranging from 1,600 to 6,500 A/m^2 for total electroplating times ranging from 20 minutes to 36 hours depending upon the desired plate thickness.

(c) (~~26~~30) HEXAVALENT CHROMIUM means the form of chromium in a valence state of +6.

(c) (~~27~~31) HIGH EFFICIENCY PARTICULATE ARRESTORS (HEPA) means filter(s) ~~rated~~ that are individually dioctyl phthalate tested and certified by the manufacturer to have a control efficiency of not less than~~at~~ 99.97 percent

~~or more efficient in collecting particle sizes~~ on 0.3 micron~~s~~ particles ~~or larger~~.

(c) (32) HEPA VACUUM means a vacuum that is both designed for the use of and fitted with a HEPA filter.

(c) (~~28~~33) LEAK means the release of chromium emissions from any opening in the emission collection system prior to exiting the emission control device.

(c) (34) LOW PRESSURE SPRAY NOZZLE means a water spray nozzle capable of regulating water pressure to 35 pounds per square inch or less.

(c) (~~29~~35) MAJOR SOURCE means any stationary source or group of stationary sources located within a contiguous area and under common control that emits, or has the potential to emit, considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.

(c) (~~30~~36) MAXIMUM CUMULATIVE POTENTIAL RECTIFIER CAPACITY means the summation of the total installed rectifier capacity associated with the hard chromium electroplating tanks at a facility, expressed in amperes, multiplied by the maximum potential operating schedule of 8,400 hours per year and 0.7, which assumes that electrodes are energized 70 percent of the total operating time. The maximum potential operating schedule is based on operating 24 hours per day, 7 days per week, 50 weeks per year.

(c) (~~31~~37) MECHANICAL FUME SUPPRESSANT means any physical device, including but not limited to polyballs that reduces fumes or mist at the surfaces of an electroplating or anodizing bath by direct contact with the surface of the bath. ~~Polyballs are the most commonly used mechanical fume suppressant.~~

(c) (38) METAL REMOVAL FLUID means a fluid used at the tool and workpiece interface to facilitate the removal of metal from the part, cool the part and tool, extend the life of the tool, and to flush away metal chips and debris, but does not include minimum quantity lubrication fluids used to coat the tool work piece interface with a thin film of lubricant and minimize heat buildup through friction reduction. Minimum quantity lubrication fluids are applied by pre-coating the tool in the lubricant, or by direct application at the tool work piece interface with a fine mist.

(c) (~~32~~39) MODIFICATION means either:

(A) ~~any~~ Any physical change in, change in method of operation of, or addition to an existing permit unit subject to this rule that requires an application for a SCAQMD ~~p~~Permit to ~~c~~Construct and/or O~~o~~perate and results in an increase in hexavalent chromium emissions. Routine maintenance and/or repair shall not be considered a physical change. A change in the method of operation of equipment, unless previously limited by an enforceable permit condition, shall not include:

(i) ~~an~~ An increase in the production rate or annual ampere-hours, unless such increases will cause the maximum design capacity of the equipment to be exceeded, or will cause a facility to be subject to a different requirement in Table ~~2~~1 – Hexavalent Chromium Emission Limits for Hexavalent Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks~~of paragraph (c)(11)~~; or

(ii) ~~an~~ An increase in the hours of operation; or

(iii) ~~a~~ A change in ownership of a source;

(B) ~~the~~ The addition of any new chromium electroplating or anodizing tank at an existing facility which increases hexavalent chromium emissions; or

(C) ~~the~~ The fixed capital cost of the replacement of components exceed~~ings~~s 50 percent of the fixed capital cost that would be required to construct a comparable new source.

(c) (~~33~~40) MODIFIED FACILITY means any existing facility which has undergone a modification on or after October 24, 2007.

(c) (~~34~~41) NEW FACILITY means any facility that begins initial operations on or after October 24, 2007. "New Facility" does not include the installation of a new chromium electroplating or chromic acid anodizing tank at an existing facility or the modification of an existing facility.

(c) (~~35~~42) OPERATING PARAMETER VALUE means a minimum or maximum value established to ~~for a~~ monitor~~ing~~ the proper operation of an air pollution control technique.~~device or process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator is in continual compliance with the applicable emission limitation or standard.~~

(c) (~~36~~43) PACKED-BED SCRUBBER means an add-on air pollution control device consisting of a single or double packed-bed that contains packing media on which the chromic acid droplets impinge. The packed-bed section of the scrubber is followed by a mist eliminator to remove any water entrained from the packed-bed section.

(c) (44) PERFLUOROOCTANE SULFONIC ACID (PFOS) BASED FUME SUPPRESSANT means a fume suppressant that contains 1 percent or greater PFOS (CAS No. 1763-23-1) by weight.

(c) (45) PERMANENT TOTAL ENCLOSURE means a permanent building or containment structure, enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off) that has limited openings to allow access for people and vehicles, that is free of breaks or deterioration that could cause or result in fugitive emissions, and has been evaluated to meet the design requirements set forth in U.S. EPA Method 204, or other design approved by the Executive Officer.

(c) (~~37~~46) RESPONSIBLE OFFICIAL means one of the following:

(A) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities and either:

(i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars); or

(ii) The delegation of authority to such representative is approved in advance by the U.-S. EPA Administrator.

(B) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.

(C) For a municipality, state, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of the ~~U.S. Environmental Protection Agency [~~U.S. EPA~~]~~).

(D) For sources (as defined in this rule) applying for or subject to a Title V permit: "responsible official" shall have the same meaning as defined in ~~District~~SCAQMD's Regulation XXX.

(c) (~~38~~47) SCHOOL means any public or private school, including juvenile detention facilities with classrooms, used for ~~purposes of~~ the education of more than 12 children at the school~~, including~~ in kindergarten ~~and grades 1~~ through grade 12.~~, inclusive,~~ School also means an Early Learning and Developmental Program by the U.S. Department of Education or any state or local early learning and development programs such as pre-schools, Early Head Start, Head Start, First Five, and Child Development Centers. A school ~~but~~ does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property~~, but does not include unimproved school property~~.

(c) (~~39~~48) SCHOOL UNDER CONSTRUCTION means any property that meets any of the following conditions~~.~~:

(A) ~~construction~~ Construction of a school has commenced; or

(B) ~~a~~ A ~~CEQA~~ California Environmental Quality Act Notice for the construction of a school has been issued; or

(C) ~~a~~ A school has been identified in an approved local government specific plan.

(c) (~~40~~49) SENSITIVE RECEPTOR means any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

(c) (~~41~~50) SOURCE means any chromium electroplating or chromic acid anodizing operation and any equipment or materials associated with the ~~selected associated~~ air pollution control technique.

(c) (~~42~~51) STALAGMOMETER means a device used to measure the surface tension of a solution by determining the mass of a drop of liquid by weighing a known number of drops, or by counting the number of drops obtained from ~~the weight of each drop, in~~ a given volume of liquid.

(c) (~~43~~52) SUBSTANTIAL USE of a SCAQMD ~~P~~permit to ~~C~~construct means one or more of the following:

(A) ~~the~~ The equipment that constitutes the source has been purchased or acquired;

(B) ~~construction~~ Construction activities, other than grading or installation of utilities or foundations, have begun and are continuing; or

(C) ~~a~~ A contract to complete construction of the source within one year has been entered into.

(c) (~~44~~53) SURFACE TENSION means the property, due to molecular forces, that exists in the surface film of all liquids and tends to prevent liquid from spreading.

(c) (~~45~~54) TANK OPERATION means the time in which current and/or voltage is being applied to a chromium electroplating tank or a chromic acid anodizing tank.

(c) (55) TANK PROCESS AREA means the area in the facility within 15 feet of any Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s), or to the nearest wall of a building enclosure or permanent total enclosure, whichever is closer.

(c) (~~46~~56) TENSIOMETER means a device used to measure the surface tension of a solution by measuring the force necessary to pull a filament, plate, ~~or~~ ring, or other SCAQMD approved object from the surface of a liquid.

(c) (57) TIER I HEXAVALENT CHROMIUM TANK means a tank permitted as containing a hexavalent chromium concentration of 1,000 parts per million (ppm) or greater and is not a Tier II or Tier III Hexavalent Chromium Tank.

(c) (58) TIER II HEXAVALENT CHROMIUM TANK means a tank that is operated or permitted to operate by the SCAQMD within the range of temperatures and corresponding hexavalent chromium concentrations specified in Appendix 10 and is not a Tier III Hexavalent Chromium Tank.

(c) (59) TIER III HEXAVALENT CHROMIUM TANK means a tank that meets any of the following:

(A) Is operated or permitted to operate by SCAQMD within the range of temperatures and corresponding hexavalent chromium concentrations specified in Appendix 10; or

(B) Contains a hexavalent chromium concentration greater than 1,000 ppm, and uses air sparging as an agitation method or is electrolytic; or

(C) Is a hexavalent chromium electroplating or chromic acid anodizing tank.

(c) (~~47~~60) TRIVALENT CHROMIUM means the form of chromium in a valence state of +3.

(c) (~~48~~61) TRIVALENT CHROMIUM PROCESS means the process used for electrodeposition of a thin layer of chromium onto a base material using a trivalent chromium solution instead of a chromic acid solution.

(c) (~~49~~62) WEEKLY means at least once every seven calendar days.

(c) (~~50~~63) WETTING AGENT means the type of chemical fume suppressant that reduces the surface tension of a liquid.

(~~c~~d) Requirements

The owner or operator of a facility shall:

(d) (1) ~~The owner or operator of a chromium electroplating tank, chromic acid anodizing tank, or group of such tanks, shall equip~~ Equip each rectified tank with a continuous recording, non-resettable, ampere-hour meter that operates on the electrical power lines connected to the tank or group of tanks. A separate meter shall be hard wired for each ~~rectifier~~tank~~.~~;

(d) (2) ~~The owner or operator of a source with any electroplating or anodizing tank using a wetting agent chemical fume suppressant shall use o~~Only use wetting agent chemical fume suppressants certified pursuant to subdivision (~~f~~l) in hexavalent chromium electroplating or chromic acid anodizing tank(s); ~~.~~

(d) (3) ~~No hexavalent chromium electroplating or chromic acid anodizing tank shall be~~ Not air sparge~~d~~ a hexavalent chromium electroplating or chromic acid anodizing tank when electroplating or anodizing is not occurring, or while chromic acid is being added;

(d) (4) Operate any Tier I, Tier II, or Tier III Hexavalent Chromium Tank within a building enclosure beginning [90 days After Date of Rule Adoption]; and

(d) (5) Operate any Tier II or Tier III Hexavalent Chromium Tank within a building enclosure that meets the requirements of subdivision (e).

(e) Requirements for Building Enclosures for Tier II and Tier III Hexavalent Chromium Tanks

Beginning [180 Days After Date of Rule Adoption], the owner or operator of a facility shall operate Tier II or Tier III Hexavalent Chromium Tank(s) within a building enclosure that meets the following requirements:

(e) (1) The combined area of all enclosure openings shall not exceed 3.5% of the building enclosure envelope, which is calculated as the total surface area of the building enclosure's exterior walls, floor, and horizontal projection of the roof on the ground. Information on calculations for the building enclosure envelope, including locations and dimensions of openings that are counted towards the applicable building envelope allowance, shall be provided in the compliance status reports required in paragraphs (p)(2) and (p)(3). Openings that close or use one or more of the following methods for the enclosure opening shall not be counted toward the combined area of all enclosure openings:

(A) Door that automatically closes; or

(B) Overlapping plastic strip curtain; or

(C) Vestibule; or

(D) Airlock system; or

(E) Alternative method to minimize the release of fugitive emissions from the building enclosure that the owner or operator of a facility can demonstrate to the Executive Officer is an equivalent or more effective method(s) to minimize the movement of air within the building enclosure.

(e) (2) Ensure that any building enclosure openings that open to the exterior and are on opposite ends of the building enclosure where air can pass through are not simultaneously open except during the passage of vehicles, equipment or people, not to exceed two hours per operating day, by using one or more of the following:

(A) A method specified in subparagraphs (e)(1)(A) through (e)(1)(E) for the enclosure opening(s) on one of the opposite ends of the building enclosure; or

(B) Utilize a barrier, such as large piece of equipment that restricts air from moving through the building enclosure.

(e) (3) Except for the movement of vehicles, equipment or people, close any building enclosure opening or use any of the methods listed in subparagraphs (e)(1)(A) through (e)(1)(E), that directly faces and opens towards the nearest:

(A) Sensitive receptor, with the exception of a school, that is located within 1,000 feet, as measured from the property line of the sensitive receptor to the building enclosure opening; and

(B) School that is located within 1,000 feet, as measured from the property line of the school to the building enclosure opening.

(e) (4) Close all enclosure openings in the roof that are located within 15 feet from the edge of any Tier II or Tier III Hexavalent Chromium Tank except enclosure openings in the roof that:

(A) Allow access for equipment or parts; or

(B) Provide intake or circulation air for a building enclosure and does not create air velocities that impact the collection efficiency of a ventilation system for an add-on air pollution control device; or

(C) Are equipped with a HEPA filter or other air pollution control device.

(e) (5) Repair any breach in a building enclosure located within 15 feet from the edge of any Tier II or Tier III Hexavalent Chromium Tank within 72 hours of discovery. The owner or operator of a facility may request an extension by calling 1-800-CUT-SMOG. The Executive Officer may approve a request for an extension beyond the 72-hour limit if the request is submitted before the 72-hour time limit has expired and the owner or operator of a facility provides information that substantiates:

(A) The repair will take longer than 72 hours, or the equipment, parts, or materials needed for the repair cannot be obtained within 72 hours; and

(B) Temporary measures are implemented that ensure no fugitive emissions result from a breach.

(e) (6) The owner or operator of a facility shall notify the Executive Officer if any of the requirements specified in paragraphs (e)(1) through (e)(4) cannot be complied with due to conflicting requirements set forth by the federal Occupational Safety and Health Administration (OSHA), California Division of Occupational Safety and Health (CAL-OSHA), or other municipal codes or agency requirements directly related to worker safety. A Building Enclosure Compliance Plan shall be submitted to the Executive Officer for review and approval no later than [30 days after Date of Rule Adoption] for facilities existing before [Date of Rule Adoption], and prior to initial start-up for all other facilities. The Building Enclosure Compliance Plan shall be subject to plan fees specified in Rule 306 and include:

(A) An explanation as to why the provision(s) specified in paragraphs (e)(1) through (e)(4) is in conflict with the requirements set forth by OSHA or CAL-OSHA, or other municipal codes or agency requirements directly related to worker safety; and

(B) Alternative compliance measure(s) that will be implemented to minimize the release of fugitive emissions to the outside of the building enclosure.

(e) (7) The Executive Officer shall notify the owner or operator of a facility in writing whether the Building Enclosure Compliance Plan is approved or disapproved.

(A) If the Building Enclosure Compliance Plan is disapproved, the owner or operator of a facility shall submit a revised Building Enclosure Compliance Plan within 30 calendar days after notification of disapproval of the Building Enclosure Compliance Plan. The revised Building Enclosure Compliance Plan shall include any information to address deficiencies identified in the disapproval letter.

(B) The Executive Officer will either approve the revised Building Enclosure Compliance Plan or modify the Building Enclosure Compliance Plan and approve it as modified. The owner or operator may appeal the Building Enclosure Compliance Plan modified by the Executive Officer to the Hearing Board pursuant to Rule 216 – Appeals and Rule 221 – Plans.

(e) (8) The owner or operator of a facility shall implement the Building Enclosure Compliance Plan specified in paragraphs (e)(6) and (e)(7), as approved by the Executive Officer, no later than 90 days after receiving notification of approval for facilities existing before [Date of Rule Adoption], and prior to initial start-up for all other facilities. Compliance with the approved alternative compliance measures shall constitute compliance with the applicable provisions of paragraphs (e)(1) through (e)(4).

(e) (9) The owner or operator of a facility that has applied for an SCAQMD permit to install or is required to install an add-on air pollution control device to control either a Tier II or Tier III Hexavalent Chromium Tank(s) shall be exempt from paragraphs (e)(1) and (e)(4) until the add-on air pollution control device has been installed and commenced normal operation.

~~(4)~~(f) Housekeeping Requirements~~:~~

An owner or operator of a ~~hexavalent~~ chromium electroplating or chromic acid anodizing facility shall:

(f) ~~(A)~~(1) Store chromic acid powder or flakes, or other substances that may contain hexavalent chromium, in a closed container in an enclosed storage area when not in use;

(f) ~~(B)~~(2) Use a closed container when transporting chromic acid powder or flakes from an enclosed storage area to chromium electroplating or chromic acid anodizing tanks;

(f) ~~(C)~~(3) Clean~~ up~~, using an approved cleaning method, or contain, using a drip tray or other containment device, any liquid or solid material that may contain hexavalent chromium that is spilled immediately and no later~~longer~~ than one hour after being spilled;

(f) ~~(D)~~(4) Clean, using an approved cleaning method, surfaces within the enclosed storage area, open floor area, walkways around the chromium electroplating or chromic acid anodizing tank(s), or any surface potentially contaminated with hexavalent chromium or surfaces that potentially accumulate dust weekly;~~ at least once every seven days in one or more of the following manners: HEPA vacuumed, hand wiped with a damp cloth, wet mopped, or maintained with the use of non-toxic chemical dust suppressants; and~~

(f) ~~(E)~~(5) Store, dispose of, recover, or recycle chromium or chromium-containing wastes generated from housekeeping activities of this subdivision using practices that do not lead to fugitive emissions~~dust~~. Containers with chromium-containing waste material shall be kept closed at all times except when being filled or emptied;

(f) (6) Beginning [30 Days After Date of Rule Adoption], use an approved cleaning method to clean floors within 20 feet of a buffing, grinding, or polishing workstation on days when buffing, grinding, or polishing are conducted; and

(f) (7) Beginning [30 Days After Date of Rule Adoption], eliminate all flooring on walkways in the tank process areas that is made of fabric, such as carpets or rugs, where hexavalent chromium containing materials can become trapped.

~~(F)~~ ~~Install a physical barrier to separate the buffing, grinding, or polishing area within a facility from the hexavalent chromium electroplating or anodizing operation. The barrier may take the form of plastic strip curtains.~~

~~(G)~~ ~~Compressed air cleaning operations shall not be conducted at or adjacent to the buffing and grinding areas or the hexavalent chromium electroplating or anodizing operations.~~

(f) (8) Abatement of Hexavalent Chromium Prior to Cutting of Roof Surfaces

The owner or operator a facility shall:

(A) Clean affected surface areas using a HEPA vacuum prior to cutting into a building enclosure roof;

(B) Minimize fugitive emissions during cutting activities using method(s) such as a temporary enclosure and/or HEPA vacuuming; and

(C) Notify the Executive Officer at least 48 hours prior to the commencement of any roof cutting activities into a building enclosure by calling 1-800-CUT-SMOG.

(f) (9) Ensure that if a HEPA vacuum is used, that the HEPA filter is free of tears, fractures, holes or other types of damage, and securely latched and properly situated in the vacuum to prevent air leakage from the filtration system.

(g) Best Management Practices

(g) ~~(H)~~(1) The owner or operator of a facility shall ~~M~~minimize dragout ~~outside of~~from a chromium ~~the~~ electroplating or chromic acid anodizing tank~~(s)~~ for: ~~by implementing the following practices:~~

~~(i)~~(A) ~~Facilities with a~~An automated line~~s~~ ~~shall have~~by installing a drip tray, or other containment device ~~installed~~ between the chromium electroplating or chromic acid anodizing tank~~s~~ ~~so~~ such that ~~the~~ liquid does not fall through the space between tanks. The ~~T~~trays shall ~~be placed such that the liquid is~~ captur~~ed~~ and return~~ed~~ the liquid to the tank(s), and be cleaned such that there is no accumulation of visible dust or residue on the drip tray or other containment device potentially contaminated with hexavalent chromium.

~~(ii)~~(B) ~~Facilities without~~A non-automated line~~s shall~~ by handle~~ing~~ each electroplated or anodized part, or equipment used to handle ~~such~~

these parts, so that liquid containing chromium or chromic acid is not dripped outside the chromium electroplating, ~~or~~ chromic acid anodizing tank,~~s,~~ ~~including~~ or associated process tank~~s~~, unless the liquid is captured by a drip tray or other containment device. Facilities spraying down parts over the chromium electroplating or chromic acid anodizing tank(s) to remove excess chromic acid shall have a splash guard installed at the tank to minimize overspray and to ensure that any hexavalent chromium laden liquid is captured and returned to the chromium electroplating or chromic acid anodizing tank. Splash guards shall be cleaned such that there is no accumulation of visible dust potentially contaminated with hexavalent chromium.

(g) (2) Beginning [90 Days After Date of Rule Adoption], the owner or operator of a facility that conducts chromium electroplating or chromic acid anodizing operations shall not spray rinse parts or equipment that were previously in a Tier II or Tier III Hexavalent Chromium Tank, unless the parts or equipment are fully lowered inside a tank where the liquid is captured inside the tank. The owner or operator of a facility may alternatively ensure that any liquid containing chromium is captured and returned to the tank by meeting the following conditions when rinsing above a tank:

(A) Installing a splash guard(s) at the tank that is free of holes, tears, or openings. Splash guards shall be cleaned weekly with water; or

(B) For tanks located within a process line utilizing an overhead crane system that would be restricted by the installation of splash guards specified in subparagraph (g)(2)(A), use a low pressure spray nozzle in a manner where water flows off of the part or equipment and into the tank.

(g) (3) Beginning [60 Days After Date of Rule Adoption], the owner or operator of a facility shall maintain clear labeling of each tank within the tank process area with a tank number or other identifier, SCAQMD permit number, bath contents, maximum concentration (ppm) of hexavalent chromium, operating temperature range, any agitation methods used, and designation of whether it is a Tier I, Tier II, or Tier III Hexavalent Chromium Tank, if applicable.

(g) (4) Beginning [90 Days After Date of Rule Adoption], the owner or operator of a facility shall conduct all buffing, grinding, and polishing operations within a building enclosure.

(g) (5) Beginning [90 Days After Date of Rule Adoption], the owner or operator of a facility shall install a barrier to prevent the migration of dust from buffing, grinding, or polishing areas to the chromium electroplating or chromic acid anodizing operation.

(g) (6) The owner or operator of a facility shall not conduct compressed air cleaning or drying operations within 15 feet of any Tier II or Tier III Hexavalent Chromium Tank(s) unless:

(A) A barrier separates the compressed air cleaning or drying operation from the Tier II or Tier III Hexavalent Chromium Tank(s). A tank wall may function as the barrier provided the parts being air cleaned or dried are below the lip of the tank; or

(B) Compressed air cleaning or drying operations are conducted in a permanent total enclosure.

(h) Air Pollution Control Technique Requirements

(h) ~~(5)~~(1) The owner or operator of a facility ~~Add-on air pollution control device(s) for hard or decorative chromium electroplating or chromic acid anodizing tanks~~ shall not ~~be~~ remove~~d~~ or render~~ed~~ inoperable add-on air pollution control device(s) for hard or decorative chromium electroplating or chromic acid anodizing tanks unless it is replaced by air pollution control techniques meeting the requirements in Table 1 - Hexavalent Chromium Emission Limits for Hexavalent Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks ~~a higher control efficiency than previously achieved, or an emission rate of 0.0015 milligrams per ampere-hour or less, whichever control efficiency is more effective, as demonstrated by a performance test conducted pursuant to subdivision (e)~~, ~~or unless~~ or the facility is operating under an approved alternative compliance method pursuant to ~~paragraph (d)(6)~~subdivision (i).

~~(6)~~ ~~Add-On Control Requirement for Hard Chromium Electroplating Tanks~~

~~During tank operation, each owner or operator of an existing, modified or new source, except facilities that have applied for and received approval for an alternative compliance method pursuant to paragraph (d)(6) or an existing operation that has applied for and received approval for an interim alternative requirement as specified in paragraph (d)(5), shall control hexavalent chromium emissions discharged to the atmosphere from that source by~~

~~reducing the hexavalent chromium emissions using an add-on air pollution control device.~~

~~(7) Training and Certification~~

~~(A) Chromium electroplating personnel responsible for environmental compliance, maintaining electroplating bath chemistries, and testing and recording electroplating bath surface tension data shall complete a District-approved training program every two years. Initial training shall have been completed prior to May 1, 2004 for facilities existing before that time. For new facilities, initial training must be completed within a period not to exceed two years of start-up.~~

~~(B) Only persons who have completed a District-approved training program and have received a certification issued by the District shall be responsible for recordkeeping associated with environmental compliance, maintaining electroplating bath chemistries, and testing and recording electroplating bath surface tension data.~~

~~(C) Notwithstanding subparagraph (c)(7)(B), in the event that all persons who have completed a District-approved training program leave employment at a facility, the owner or operator may be responsible for recordkeeping associated with environmental compliance, maintaining electroplating bath chemistries, and testing and recording electroplating bath surface tension data for a period not to exceed two years.~~

~~(8) Interim Emission Standards for Existing Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities Located 25 Meters or Less from a Licensed Daycare, Hospital, Convalescent Home, or a Residence, or Located 100 Meters or Less from an Existing, as of May 2, 2003, School.~~

~~The following emission limitations shall be in effect until the limits of paragraph (c)(11) become effective.~~

~~(A) The owner or operator shall reduce hexavalent chromium emissions to an emission limitation of 0.0015 milligram or less per ampere-hour for each tank, as measured after add-on controls, if any; or~~

~~(B) The owner or operator shall comply with any applicable interim alternative compliance option, as specified in paragraphs (d)(1) through (d)(5).~~

~~(9) Interim Emission Standards for Existing Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities Located More than 25 Meters from a Licensed Daycare, Hospital, Convalescent Home, or a Residence, and More than 100 Meters from an Existing, as of May 2, 2003, School.~~

~~The following emission limitations shall be in effect until the limits of paragraph (c)(11) become effective.~~

~~(A) The owner or operator shall reduce hexavalent chromium emissions to an emission limitation of:~~

~~(i) 0.01 milligrams or less per ampere-hour for each tank, as measured after add-on controls, if any, when actual consumption of electrical current used by the facility for electroplating or anodizing tanks subject to this rule is less than the threshold given in Table 1, for the appropriate operating scenario and operating schedule, or the applicable distance-adjusted ampere-hour level as specified in Appendix 7; or~~

~~(ii) 0.0015 milligrams or less per ampere-hour for each tank, as measured after add-on controls, if any, when actual consumption of electrical current used by the facility for electroplating or anodizing tanks subject to this rule exceeds the threshold given in Table 1, for the appropriate facility operating scenario and regular operating schedule, or the applicable distance-adjusted ampere-hour level as specified in Appendix 7; or~~

~~(B) The owner or operator shall comply with any applicable interim alternative compliance option, as specified in paragraphs (d)(1) through (d)(5).~~

~~Table 1~~

~~Ampere-Hour Thresholds for Facilities Located More than 25 Meters from a Sensitive Receptor or a Residence~~

~~**Operating Scenario**~~	~~**Regular Operating Schedule**~~	~~**Ampere-Hour Threshold**~~
~~Vented to Air Pollution Control Device~~	~~More than 12 hours per day~~	~~1,800,000 ampere-hours/yr~~
~~Vented to Air Pollution Control Device~~	~~12 hours per day or less~~	~~1,600,000 ampere-hours/yr~~

~~Not Vented to Air Pollution Control Device~~	~~Any~~	~~1,150,000 ampere-hours/yr~~

~~(10)~~ ~~Interim Emission Standards for Existing Facilities Conducting Multiple Hexavalent Chromium Electroplating Processes or Anodizing Processes~~

~~(A)~~ ~~For any facility subject to paragraph (c)(9) where a combination of hexavalent chromium electroplating or chromic acid anodizing is conducted, the owner or operator shall comply with an emission limitation in lieu of the one specified in paragraph (c)(9). The emission limitation shall be determined by calculating weighted facility energy consumption over any calendar year, using the following equation:~~

$$\cancel{\text{Weighting Factor}} = \frac{\cancel{\text{Tanks Vented to APC Operating} > \text{12 hrs/day (Amp-hrs/yr)}}}{\cancel{(1)}} + \frac{\cancel{\text{Tanks Vented to APC Operating} \le \text{12 hrs/day (Amp-hrs/yr)}}}{\cancel{(2)}} + \frac{\cancel{\text{Tanks Not Vented to APC (Amp-hrs/yr)}}}{\cancel{(3)}}$$

~~Where:~~

~~(1)~~ = ~~1,800,000 ampere-hours per year or applicable distance-adjusted ampere-hour level as specified in Appendix 7.~~

~~(2)~~ = ~~1,600,000 ampere-hours per year or applicable distance-adjusted ampere-hour level as specified in Appendix 7.~~

~~(3)~~ = ~~1,150,000 ampere-hours per year or applicable distance-adjusted ampere-hour level as specified in Appendix 7.~~

~~(B)~~ ~~If weighted source energy consumption is less than or equal to 1, the applicable emission limitation shall be 0.01 milligram or less per ampere-hour for each tank~~

~~(C)~~ ~~If weighted source energy consumption is greater than 1, the applicable emission limitation shall be 0.0015 milligram or less per ampere-hour for each tank, as measured after add-on controls, if any.~~

(h) ~~(11)~~(2) Emission Standards for ~~Existing~~ Hexavalent Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Facilities ~~beginning October 24, 2007~~

(A) The owner or operator of a facility ~~of an existing facility~~ shall control hexavalent chromium emissions discharged to the atmosphere by meeting the requirements identified below in Table 1~~2~~ - Hexavalent Chromium Emission Limits for Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks. Alternatively, a facility can choose to comply by operating under an approved alternative compliance method pursuant to subdivision (i)~~paragraph (d)(6)~~.

Table 1: Hexavalent Chromium Emission Limits for Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks

Facility Type	**Distance to Sensitive Receptor (feet)**	**Annual Permitted Amp-Hrs**	**Hexavalent Chromium Emission Limit (mg/amp-hr)**	**Minimum Air Pollution Control Technique**
Existing Facility	≤ 330[1]	≤ 20,000	0.01	Use of Certified Chemical Fume Suppressant at or below the certified surface tension.[3]
Existing Facility	≤ 330[1]	> 20,000	0.0015[2]	Add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s).
Existing Facility	> 330[1]	≤ 50,000	0.01	Use of Certified Chemical Fume Suppressant at or below the certified surface tension.[3]
Existing Facility	> 330[1]	> 50,000 and ≤ 500,000	0.0015[2]	Use of an air pollution control technique that controls hexavalent chromium.
Existing Facility	> 330[1]	> 500,000	0.0015[2]	Add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s).
Modified Facility	Any	Any	0.0015[2]	Using an add-on air pollution control device(s), or an approved alternative method pursuant to subdivision (i).
New Facility	Any	Any	0.0011[2]	Using a HEPA add-on air pollution control device, or an approved alternative method pursuant to subdivision (i).

[1] Distance shall be measured, rounded to the nearest foot, from the edge of the chromium electroplating or chromic acid anodizing tank nearest the sensitive receptor (for facilities without add-on air pollution control devices), or from the stack or centroid of stacks (for facilities with add-on air pollution control devices), to the property line of the nearest sensitive receptor. The symbol ≤ means less than or equal to. The symbol > means greater than.

[2] As demonstrated by source test requirements under subdivision (k).

[3] Alternatively, a facility may install an add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s) that controls hexavalent chromium emissions to below 0.0015 mg/amp-hr as demonstrated through source test requirements under subdivision (k).

~~**Table 2: Hexavalent Chromium Emission Limits for Existing Tanks**~~

~~**Distance to Sensitive Receptor (meters)**~~	~~**Annual Permitted Ampere-hours**~~	~~**Emission Limit (mg/amp-hr)**~~	~~**Effective Date**~~
~~≤ 100~~	~~≤ 20,000~~	~~0.01[2]~~	~~4/24/2008~~
~~≤ 100~~	~~> 20,000 and ≤ 200,000~~	~~0.0015[1]~~	~~10/24/2010~~
~~≤ 100~~	~~> 200,000~~	~~0.0015[1]~~	~~10/24/2009~~
~~> 100~~	~~≤ 50,000~~	~~0.01[2]~~	~~4/24/2008~~

~~> 100~~	~~> 50,000 and ≤ 500,000~~	~~0.0015~~	~~10/24/2011~~
~~> 100~~	~~> 500,000~~	~~0.0015[1]~~	~~10/24/2009~~

~~[1] Measured after add-on air pollution control device(s).~~
~~[2] Achieved through use of Certified Chemical Fume Suppressants. Alternatively, a facility may install an add-on air pollution control device(s) that controls emissions to below 0.0015 mg/amp-hr.~~

~~(B)~~ ~~The owner or operator of an existing facility shall submit by November 24, 2007, a notification to the District providing distance(s) to the nearest sensitive receptor. Distances shall be measured as follows:~~

~~(i)~~ ~~For facilities that do not have an add-on air pollution control device on October 24, 2007, the measurement shall be the distance, rounded to the nearest foot, from the edge of the hexavalent chromium electroplating or anodizing tank nearest the sensitive receptor to the property line of the nearest sensitive receptor that exists on October 24, 2007.~~

~~(ii)~~ ~~For facilities with an add-on air pollution control device on October 24, 2007, the measurement shall be the distance, rounded to the nearest foot, from the centroid of the stack to the property line of the nearest sensitive receptor that exists on October 24, 2007.~~

~~(C)~~ ~~Screening Health Risk Assessment~~

~~(i)~~ ~~The owner or operator of an existing facility shall conduct a screening health risk assessment if annual hexavalent chromium emissions from the chromium electroplating and chromic acid anodizing operations exceed 15 grams in the calendar year following the year of the facility's applicable effective compliance date specified in Table 2 of paragraph (c)(11) and any calendar year thereafter.~~

~~(ii)~~ ~~The screening health risk assessment shall be conducted for hexavalent chromium emissions from the hexavalent chromium electroplating and chromic acid anodizing operations, and in accordance with the most current version of the District's "Risk Assessment Procedures of Rules 1401 and 212" or "Air Toxics Hot Spots Program Risk Assessment Guidelines" *(OEHHA Guidelines)*.~~

~~(iii) The owner or operator shall submit the screening health risk assessment to the Executive Officer within 120 days of the end of the calendar year during which the facility's hexavalent chromium emissions exceeded 15 grams.~~

~~(iv) The owner or operator may comply with clause (c)(11)(C)(i) by using an existing health risk assessment or screening health risk assessment previously approved by the District provided the existing health risk assessment is:~~

~~(I) Based on the most current version of the District's "Risk Assessment Procedures of Rules 1401 and 212" or *OEHHA Guidelines*; and~~

~~(II) representative of the chromium electroplating or chromic acid anodizing operating conditions for the subject year; and~~

~~(III) calculated using an annual hexavalent chromium emission amount that is equal to or greater than the amount of the subject year; and~~

~~(IV) uses receptor distances less than or equal to those for the subject year.~~

~~(12) Modified Hexavalent Chromium Electroplating or Chromic Acid Anodizing Facilities~~

~~(A) The owner or operator of a modified facility shall, upon start-up of modification, control hexavalent chromium emissions from the electroplating or anodizing tank(s) by:~~

~~(i) Using an add-on air pollution control device(s), or an approved alternative method pursuant to paragraph (d)(6), to control hexavalent chromium emission, and~~

~~(ii) Meeting an emission limit of 0.0015 milligrams per ampere-hour or less.~~

~~(B) When annual emissions of hexavalent chromium after modification are expected to exceed 15 grams per calendar year, the owner or operator shall demonstrate that the modification complies with District Rules 1401, 1401.1 and 1402 prior to initial start-up.~~

~~(13) New Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities~~

~~(A)~~(B) The owner or operator of a new facility~~ conducting hexavalent chromium electroplating or chromic acid anodizing operations~~ shall:

(i) Demonstrate in its SCAQMD permit application that the new facility is not located in an area that is zoned for residential or mixed use; and

(ii) Demonstrate in its SCAQMD permit application that the new facility~~, determined by the District,~~ is not located within 1,000 feet from the boundary of a sensitive receptor, a school under construction, or any area that is zoned for residential or mixed use~~;~~.

~~(iii) Reduce hexavalent chromium emissions discharged to the atmosphere from the electroplating or anodizing tank(s) by installing a HEPA add-on air pollution control device, or an approved alternative method pursuant to paragraph (d)(6);~~

~~(iv) Meet a hexavalent chromium emission rate of ≤ 0.0011 milligrams/ampere-hour as measured after the HEPA add-on air pollution control device;~~

~~(v) Conduct a facility-wide screening health risk assessment for all toxic air contaminant emissions which shall be submitted to the District when filing applications for Permit to Construct/Operate the new equipment. The screening health risk assessment shall be conducted in accordance with the most current version of the District's "Risk Assessment Procedures of Rules 1401 and 212" or *OEHHA Guidelines*; and~~

~~(vi) Comply with District Rules 1401 and 1401.1, if applicable.~~

~~(B)~~(C) A new facility shall be deemed to meet the requirements specified in clauses ~~(c)(13)(A)(i)~~(h)(2)(B)(i) and (h)(2)(B)(ii) if one of the following criteria is met, even if the facility does not meet the requirement at the time of initial start-up:

(i) The requirements specified in clauses ~~(c)(13)(A)(i)~~(h)(2)(B)(i) and (h)(2)(B)(ii) are met at the time an SCAQMD P~~p~~ermit to C~~c~~onstruct is issued~~ by the District~~, and substantial use of the SCAQMD P~~p~~ermit to C~~c~~onstruct takes place within one year after it is issued; or

(ii) The requirements specified in clauses ~~(c)(13)(A)(i)~~(h)(2)(B)(i) and (h)(2)(B)(ii) are met at the time an SCAQMD ~~p~~Permit to ~~c~~Construct is issued ~~by the District~~, and substantial use of the SCAQMD ~~p~~Permit to ~~c~~Construct ~~takes place~~occurs before any zoning change ~~occurs~~ that affects the operation's ability to meet the requirement at the time of initial start-up.

~~(C)~~(D) Prior to initial start-up, the owner or operator of a new facility shall ~~demonstrate to the District that the new facility~~ meets the requirements specified in paragraph ~~(c)(13)~~(h)(2).

(h) ~~(14)~~(3) Decorative Chromium Electroplating Tanks Using a Trivalent Chromium Bath

~~(A)~~ During tank operation, the owner or operator of a facility shall control chromium emissions discharged to the atmosphere by meeting one or more of the requirements identified below.

Method of compliance	Requirement
Add-on air pollution control device, or chemical fume suppressants forming a foam blanket, or mechanical fume suppressants (~~i.e.~~e.g. polyballs)	≤ 0.01 milligrams of total chromium per dry standard cubic meter of air (mg/dscm) (4.4x10-6 gr/dscf) as demonstrated with an initial source test using an approved method pursuant to paragraph (k)(2)
~~Certified c~~Chemical fume suppressants containing a wetting agent that is not a PFOS based fume suppressant	Use wetting agent as bath component and comply with recordkeeping and reporting provisions of paragraphs ~~(j)(9)~~(o)(10) and ~~(k)~~(p)(5)~~.~~

~~(B)~~ ~~New facilities that perform electroplating using a trivalent chromium bath shall conduct a facility-wide screening health risk assessment for all toxic air contaminant emissions which shall be submitted to the District when filing applications for Permit to Construct/Operate the new equipment. The screening health risk assessment shall be conducted in accordance with the most current version of the District's "Risk Assessment Procedures of Rules 1401 and 212" or *OEHHA Guidelines*.~~

~~(15) Permit Application Submittals~~

~~(A) The owner or operator of a hexavalent chromium electroplating or chromic acid anodizing facility subject to this rule, that either does not have a permitted annual ampere-hour limit, or is requesting a reduction of an existing ampere-hour limit, shall submit an application for administrative change of operating condition subject to fees specified in Rule 301. The application shall be submitted to the District no later than February 24, 2009.~~

~~(B) The owner or operator of an existing hexavalent chromium electroplating or chromic acid anodizing facility shall submit permit applications for all new or modified equipment necessary to comply with the requirements of Table 2 of paragraph (c)(11). Permit applications shall be submitted to the District no later than 8 months prior to the applicable effective date of Table 2.~~

(h) (4) Tier III Hexavalent Chromium Tanks (Excluding Chromium Electroplating and Chromic Acid Anodizing Tanks)

(A) The owner or operator of a facility shall collect and vent hexavalent chromium emissions from any Tier III Hexavalent Chromium Tank, excluding chromium electroplating and chromic acid anodizing tanks subject to paragraph (h)(2), to an add-on air pollution control device, or an approved alternative compliance method pursuant to subdivision (i), that meets the following hexavalent chromium emission limits as demonstrated by source test requirements under subdivision (k):

(i) 0.0015 mg/amp-hr, for existing or modified facilities, if any tank(s) vented to an air pollution control device are electrolytic;

(ii) 0.0011 mg/amp-hr, for new facilities, if any tank(s) vented to an air pollution control device are electrolytic;

(iii) 0.20 mg/hr, if all tanks vented to the add-on air pollution control device are not electrolytic and the ventilation system has a maximum exhaust rate of 5,000 cfm or less; or

(iv) 0.004 mg/hr-ft^2, with the applicable surface area based on the surface area of all Tier III Hexavalent Chromium Tank(s) and other tanks required to be vented to an add-on air pollution control device with a SCAQMD Permit to

Operate, provided all tanks are not electrolytic, if the ventilation system has a maximum exhaust rate of greater than 5,000 cfm.

(B) For Tier III Hexavalent Chromium Tanks specified in subparagraph (h)(4)(A) existing prior to [Date of Rule Adoption], the owner or operator of a facility shall submit complete SCAQMD permit applications for add-on air pollution control devices to the Executive Officer as specified below:

Table 2: Permit Submittal Schedule for Add-on Air Pollution Control Devices for Previously Existing Tier III Hexavalent Chromium Tanks[1]

Electrolytic Process at the Facility	Compliance Date for SCAQMD Permit Application Submittal for Add-on Air Pollution Control Device
Chromic Acid Anodizing	[180 Days after Date of Rule Adoption]
Hard Chromium Electroplating	[365 Days after Date of Rule Adoption]
Decorative Chromium Electroplating	[545 Days after Date of Rule Adoption]

[1] For multiple electrolytic processes at a facility, the owner or operator shall comply with the earliest compliance date.

(i) The owner or operator of a facility shall conduct a source test prior to the issuance of a SCAQMD Permit to Operate.

(ii) Beginning no later than [30 days after Date of Rule Adoption] until the add-on air pollution control device specified in subparagraph (h)(4)(C) has been installed, cover the tank no later than 30 minutes after ceasing operation of the tank. Tank covers shall be free of holes, tears, and gaps.

(C) The owner or operator of a facility shall:

(i) Install an add-on air pollution control device to meet the requirements under subparagraph (h)(4)(A) no later than 12 months after a Permit to Construct for the add-on air pollution control device has been issued by the Executive Officer;

(ii) Implement the alternative compliance method to meet the requirements under subparagraph (h)(4)(A) based on the timeframe specified in the approved alternative compliance method; or

(iii) No later than two years after approval, implement an approved Hexavalent Chromium Phase-Out Plan pursuant to subdivision (u).

(D) The owner or operator of a facility shall not be subject to the requirement of subparagraph (h)(4)(A) to vent a Tier III Hexavalent Chromium Tank to an add-on air pollution control device if the uncontrolled hexavalent chromium emission rate of the tank is less than 0.2 mg/hr, as demonstrated by a SCAQMD approved source test. The source test shall be conducted pursuant to the Technical Guidance Document for *Measurement of Hexavalent Chromium Emissions from Chromium Plating and Chromic Acid Anodizing Operations for Certification of Wetting Agent Chemical Mist Suppressant Subject to SCAQMD Rule 1469*.

(h) (5) Tier II Hexavalent Chromium Tank

The owner or operator of a facility shall control hexavalent chromium emissions from a Tier II Hexavalent Chromium Tank by:

(A) Utilizing a tank cover, mechanical fume suppressant, or other method approved by the Executive Officer, no later than [90 Days from Date of Adoption]; or

(B) Meeting the requirements for a Tier III Hexavalent Chromium Tank specified in subparagraphs (h)(4)(A) and (h)(4)(B).

(h) (6) Ventilation Design and Operation of Air Pollution Control Techniques

The owner or operator of a facility shall operate air pollution control techniques required under subdivisions (h) at or above the applicable minimum hood induced capture velocity specified in the most current edition (i.e., at the time the SCAQMD permit application was deemed complete by SCAQMD) of *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists.

~~(d) Alternative Compliance Options and Methods~~

~~(1) Alternative Interim Compliance Options – Inventory and Health Risk Assessment~~

~~In lieu of complying with the interim requirements of paragraphs (c)(8), (c)(9), or (c)(10) an owner/operator may elect to submit an inventory and health risk assessment prepared pursuant to Rule 1402 - Control of Toxic Air Contaminants from Existing Sources, subdivisions (n) [Emissions Inventory Requirements] and (j) [Risk Assessment Procedures].~~

~~(A)~~ ~~Health risk assessments approved by the Executive Officer prior to May 2, 2003, shall demonstrate that facility-wide emissions of all toxic air compounds result in a cancer risk of:~~

~~(i)~~ ~~Less than 25 in a million for facilities located more than 25 meters from a licensed daycare center, hospital, convalescent home, or a residence, and located more than 100 meters from an existing, as of May 2, 2003, school (kindergarten through grade 12).~~

~~(ii)~~ ~~Less than 10 in a million for facilities located 25 meters or less from a licensed daycare center, hospital, convalescent home, or a residence, or located 100 meters or less from an existing, as of May 2, 2003, school (kindergarten through grade 12).~~

~~(B)~~ ~~Health risk assessments not approved by the Executive Officer prior to May 2, 2003, shall demonstrate that facility-wide emissions of all toxic compounds with existing controls result in a cancer risk of those specified in (d)(1)(A)(i) or (d)(1)(A)(ii) at their respective receptor distances.~~

~~(i)~~ ~~The inventory and health risk assessment shall be submitted by January 1, 2004.~~

~~(ii)~~ ~~After review, the Executive Officer will notify the facility in writing whether a health risk assessment conducted pursuant to this paragraph is approved or disapproved.~~

~~(iii)~~ ~~If a health risk assessment conducted pursuant to this paragraph is disapproved, or if the approved cancer risk exceeds those specified in (d)(1)(A)(i) or (d)(1)(A)(ii) at their respective receptor distances, the facility shall comply with the applicable interim requirements of (c)(8), (c)(9), or (c)(10) no later than one year after notification by the District. Within 60 days from the date of disapproval, the owner or operator shall begin use of a wetting agent~~

~~chemical fume suppressant certified pursuant to subdivision (f).~~

~~(C)~~ ~~The owner or operator of a facility subject to subparagraph (d)(1)(A) or (d)(1)(B) shall comply with enforceable conditions to ensure that controls result in a cancer risk of those specified in (d)(1)(A)(i) or (d)(1)(A)(ii) at their respective receptor distances.~~

~~(D)~~ ~~If a health risk assessment, approved under this paragraph as demonstrating a cancer risk of those specified in (d)(1)(A)(i) or (d)(1)(A)(ii) at their respective receptor distances, is subsequently determined to demonstrate actual cancer risks exceeding 25 in a million or 10 in a million, as applicable, the health risk assessment will be disapproved and the owner or operator of the facility shall comply with the specific applicable interim requirements of (c)(8), (c)(9), or (c)(10) no later than one year after notification of disapproval by the District. Within 60 days from the date of notification, the owner or operator shall begin use of a wetting agent chemical fume suppressant certified pursuant to subdivision (f).~~

~~(2)~~ ~~Alternative Interim Compliance Options – Emission Reduction Plan~~

~~(A)~~ ~~In lieu of complying with the specific interim requirements of paragraph (c)(8), the owner or operator of a facility located 25 meters or less from a licensed daycare center, hospital, convalescent home, or a residence, or located 100 meters or less from an existing, as of May 2, 2003, school (kindergarten through grade 12) may elect to submit an Emission Reduction Plan identifying potential emission reduction strategies on or before May 1, 2004. The plan shall demonstrate that facility-wide hexavalent chromium emissions result in a cancer risk of ≤ 10 in a million and shall include, but is not limited to, the following areas:~~

~~(i)~~ ~~pollution prevention;~~

~~(ii)~~ ~~voluntary, enforceable reduction in ampere-hour limits; and~~

~~(iii)~~ ~~installation of add-on control.~~

~~(B)~~ ~~Following Executive Officer approval, the owner or operator of a facility that elects to implement an Emissions Reduction Plan shall do the following:~~

~~(i) submit all necessary permit applications within 90 days of plan approval; and~~

~~(ii) install necessary control equipment within 15 months from the date of plan approval; and~~

~~(iii) conduct any performance test required for compliance with a permit condition or a compliance plan condition pursuant to subdivision (e).~~

~~(3) Alternative Interim Compliance Options – Maximum Installed Controls~~
~~Effective May 1, 2005, in lieu of complying with the interim requirements of paragraphs (c)(8), (c)(9), or (c)(10) the owner or operator shall use HEPA or an equivalent air pollution control technique and use a wetting agent chemical fume suppressant, certified under subdivision (f), and comply with all applicable permit conditions and approved Compliance Plan conditions.~~

~~(4) Alternative Interim Compliance Options - Facility-wide Mass Emission Rate~~

~~(A) As an alternative to complying with the interim emission limitation requirements of paragraph (c)(9), the owner or operator of a facility that is located more than 25 meters from a licensed daycare center, hospital, convalescent home, or a residence, and located more than 100 meters from an existing, as of May 2, 2003, school (kindergarten through grade 12) shall provide calculations in the Compliance Plan to demonstrate that facility-wide emissions of hexavalent chromium do not exceed the threshold in Table 3 for the appropriate facility operating scenario and regular operating schedule, or the applicable distance-adjusted annual emission level as specified in Appendix 7.~~

~~Table 3~~
~~Annual Emission Thresholds for Facilities Located More than 25 Meters from a Licensed Daycare Center, Hospital, Convalescent Home, or a Residence~~

~~**Operating Scenario**~~	~~**Regular Operating Schedule**~~	~~**Annual Emission Threshold**~~
~~Vented to Air Pollution Control Device~~	~~12 hours per day or less~~	~~0.036 lbs/yr~~
~~Vented to Air Pollution Control Device~~	~~More than 12 hours per day~~	~~0.04 lbs/yr~~
~~Not Vented to Air Pollution Control Device~~	~~Any~~	~~0.025 lbs/yr~~

~~(B) The owner or operator of a facility complying with this paragraph shall use the Hexavalent Chromium Source Test Parameter Guidance Document to establish testing parameters.~~

~~(C) The owner or operator of a facility complying with this paragraph shall update the facility-wide emissions calculations every year using process information from the preceding twelve months, and shall provide such calculations upon request.~~

~~(5) Alternative Interim Compliance Options – Alternative Standards for Existing Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities with Low Annual Ampere-Hour Usage~~

~~(A) Until the emission limits of paragraph (c)(11) become effective, the Executive Officer may approve a Compliance Plan specifying interim alternative standards for facilities with actual consumption of electrical current less than or equal to 365,000 ampere-hours for any calendar year. For hard chromium electroplating facilities constructed on or before December 16, 1993, the Executive Officer, with U.S. EPA concurrence shall approve this plan if equivalent results are obtained. Upon approval, the requirements identified in the plan shall be the applicable requirements under this regulation.~~

~~(B) At a minimum, the hexavalent chromium electroplating or chromic acid anodizing tank shall use chemical fume suppressants containing a wetting agent to lower the surface tension of the electroplating bath to no more than 45 dynes per centimeter (dynes/cm)~~ ~~($3.1x10^{-3}$ pound-force per foot [lbF/ft]), or the surface tension established during testing of a certified fume suppressant under subdivision (f).~~

~~(C) Upon approval of a facility's Compliance Plan, the Executive Officer may require additional emission reduction techniques as necessary to reduce the public health impact of emissions from the operation.~~

~~(D) The owner or operator shall comply with the applicable monitoring [subdivision (g)], recordkeeping [subdivision (j)], and reporting [subdivision (k)] requirements.~~

~~(E) If the facility is located 25 meters or less from a licensed daycare center, hospital, convalescent home, or a residence, or located 100 meters or less from an existing, as of May 2, 2003, school~~

~~(kindergarten through grade 12), and actual consumption of electrical current exceeds 500,000 ampere-hours per year after May 2, 2003, the owner or operator shall use HEPA or an equivalent air pollution control technique and use a wetting agent chemical fume suppressant certified under subdivision (f), on all hexavalent chromium electroplating and chromic acid anodizing tanks. An application for a permit to construct the control equipment shall be filed within 90 days of the date of the approved Notice of Violation for the ampere-hour threshold exceedance and the control equipment shall be installed within 15 months from the date of the approved Notice of Violation for the ampere-hour threshold exceedance.~~

~~(F) Emission-Related Exceedance~~

~~(i) Effective November 1, 2003, the owner or operator of a facility subject to paragraph (d)(5) located 25 meters or less from a licensed daycare center, hospital, convalescent home, or a residence, or located 100 meters or less from an existing, as of May 2, 2003, school (kindergarten through grade 12) that is using a wetting agent chemical fume suppressant with no associated add-on air pollution control device(s) will begin to accrue notices of violation for emission-related exceedances specified under (d)(5)(F)(ii). The owner or operator of a facility who accrues three or more approved notices of violation for an emission-related exceedance within a five year period shall comply with the emission limitation specified in subparagraph (c)(8)(A) by installing a ventilation system and HEPA controls, or equivalent controls, on all hexavalent chromium electroplating and chromic acid anodizing tanks.~~

~~An application for a permit to construct the control equipment shall be filed within 90 days of the date of the third approved notice of violation and the control equipment shall be installed within 15 months from the date of the third approved notice of violation.~~

~~(ii) An emission-related exceedance, for the purpose of this rule, is defined as:~~

~~(I) exceeding the applicable surface tension limit established under subdivision (f) or subparagraph (d)(5)(B) for a wetting agent chemical fume suppressant; or~~

~~(II) exceeding the ampere-hour limit specified in subparagraph (d)(5)(A) by 135,000 ampere-hours per year, or less, or exceeding the ampere-hour limit in an approved Compliance Plan condition for any calendar year; or~~

~~(III) exceeding the chromic acid weight concentration limit specified in any permit issued after May 2, 2003; or~~

~~(IV) a missing stalagmometer, tensiometer, or ampere-hour meter or a broken or inoperable stalagmometer, tensiometer, or ampere-hour meter unless:~~

~~(a) it is repaired or replaced within one week after its breakdown; or~~

~~(b) the tank or tanks served by the device are removed from service until the device has been repaired or replaced; or~~

~~(c) the owner can provide proof of ordering a new device within 7 days after the device became broken or inoperable, and the device is replaced within 14 days after it became broken or inoperable.~~

~~(iii) For the purpose of counting notices of violations which may trigger the installation of controls pursuant to this subparagraph, a notice of violation shall be counted as a single emission-related exceedance even if it cites multiple emission-related exceedances as defined in subparagraph (d)(5)(F), provided that the multiple emission-related exceedances are based on a single field inspection conducted in one day.~~

~~(iv) The provisions of subparagraph (d)(5)(F) shall apply to an owner or operator of a facility within any five year time period.~~

~~(v)~~ ~~The provisions of this paragraph shall in no way limit the evaluation or prosecution by the District of any notices of violation or any emissions-related exceedances contained therein.~~

~~(6)~~(i) Alternative Compliance Methods for Existing, Modified, and New ~~New, Modified and Existing~~ Hexavalent Decorative and Hard Chromium Electroplating and Chromic Acid Anodizing Facilities

The owner or operator of a facility ~~may~~ that elects to submit ~~to the District~~ an alternative compliance method~~(s)~~ to meet the emission limits specified in paragraphs (h)(2) and (h)(4) ~~to subparagraphs (c)(11)(A) for existing facilities, clause (c)(12)(A)(i) for modified facilities, and clause (c)(13)(A)(iii) for new facilities. In order to operate under this paragraph, the owner or operator~~ shall:

(i) ~~(A)~~(1) Submit an SCAQMD permit application that includes the information contained in Appendix ~~8~~ 7 to the Executive Officer; and~~.~~

(i) ~~(B)~~(2) Demonstrate that the alternative method~~(s)~~ is enforceable, provides an equal, or greater hexavalent chromium emission reduction, and provides an equal, or greater risk reduction than ~~would direct~~ compliance with the emission limits ~~requirements of~~ specified in paragraphs ~~(c)(11)(A)~~(h)(2) and (h)(4) ~~for existing facilities, (c)(12)(A)(i) for modified facilities, and (c)(13)(A)(iii) for new facilities~~.

~~(C)~~ ~~Implement alternative method(s), upon approval by the Executive Officer, within the applicable compliance dates of Table 2 of (c)(11)(A) for existing facilities and prior to initial start-up for new or modified facilities.~~

(j) Training and Certification

(j) (1) Chromium electroplating and chromic acid anodizing personnel responsible for environmental compliance, maintaining electroplating bath chemistries, and testing and recording electroplating bath surface tension data shall complete a SCAQMD approved training program every two years and receive a certification issued by the Executive Officer. For new facilities, initial training must be completed within a period not to exceed two years from start-up.

(j) (2) Only persons who have completed a SCAQMD approved training program and have received a certification issued by the Executive Officer shall be responsible for recordkeeping associated with environmental compliance, maintaining electroplating bath chemistries, and testing and recording electroplating bath surface tension data.

(j) (3) Notwithstanding paragraph (j)(2), in the event that all persons who have completed a SCAQMD approved training program and received a certification issued by the Executive Officer leaves employment at a facility, the owner or operator of a facility may be responsible for recordkeeping associated with environmental compliance, maintaining electroplating bath chemistries, and testing and recording electroplating bath surface tension data for a period not to exceed two years.

(~~e~~k) ~~Performance~~ Source Test Requirements and Test Methods

(k) (1) ~~Performance~~ Source Test Requirements

(A) The owner or operator of ~~an existing~~ a facility ~~using add-on air pollution control device(s), foam blanket chemical fume suppressants, or mechanical fume suppressants to comply with the requirements of paragraphs (c)(8) through (c)(11), (d)(5), or any source electing to comply with the mg/dscm emission standard in paragraph (c)(14)~~ required to meet an emission limit pursuant to paragraphs (h)(2) or (h)(4) shall conduct an ~~performance~~initial source test and subsequent source tests pursuant to the schedule specified in Table 3 – Source Tests Schedule. ~~to demonstrate compliance with the applicable emission standards within 180 days after initial startup or before the applicable effective date listed in Table 2 of paragraph (c)(11), whichever is sooner. New or modified facilities complying with the requirements of paragraphs (c)(12) and (c)(13) shall conduct a performance test within 60 days after initial start-up.~~

Table 3: Source Tests Schedule

Facility-wide Permitted Annual Ampere-Hours	**Due Date of Initial Source Test Protocol[a]**	**Initial Source Test Date**	**Due Date of Subsequent Source Test Protocol**	**Subsequent Source Tests**
> 20,000,000	No later than [180 Days After Date of Rule Adoption]	No later than 120 days after approval of the initial source test protocol.	180 days prior to the due date of the subsequent source test.	No later than 60 months from the day of the most recent source test that demonstrates compliance with all applicable requirements
< 20,000,000 and > 1,000,000	No later than [365 Days After Date of Rule Adoption]			

≤ 1,000,000	No later than [545 Days After Date of Rule Adoption]			No later than 84 months from the day of the most recent source test that demonstrates compliance with all applicable requirements

[a] New or modified air pollution control techniques used to meet the emission limits under paragraphs (h)(1), (h)(2), or (h)(4) permitted after [Date of Adoption], shall submit the initial source test protocol 60 days after initial start-up of the air pollution control technique.

(B) The owner or operator of a facility may conduct the initial source test after the 120 days specified in Table 3 – Source Tests Schedule, provided:

(i) A written request 30 days before the due date of the source test is submitted to the Executive Officer;

(ii) The additional time needed is substantiated by reason(s) outside of their control; and

(iii) The Executive Officer approves the request in writing no later than the due date of the source test.

(C) The owner or operator of a facility may use an existing source test conducted after January 1, 2015 to demonstrate compliance with the initial source test requirements of subparagraph (k)(1)(A), provided:

(i) The applicable emission limits in subdivision (h) are demonstrated;

(ii) The operating conditions during the source test are representative of the operating conditions as of [Date of Rule Adoption]; and

(iii) Test methods specified in paragraph (k)(2) are used.

(D) No later than [30 days after Date of Rule Adoption], an owner or operator of a facility using a source test pursuant to subparagraph (k)(1)(C) that has not been approved, shall submit the source test to the Executive Officer for approval.

(E) An owner or operator of a facility that elects to use an existing source test pursuant to subparagraph (k)(1)(C), shall conduct the first subsequent source test no later than January 1, 2024 and conduct all other subsequent source tests pursuant to schedule in Table 3 - Source Tests Schedule.

(F) An owner or operator of facility that elects to meet an emission limit specified in paragraph (h)(2) using only a certified wetting agent chemical fume suppressant or a certified alternative to a wetting agent ~~air pollution control technique~~chemical fume suppressant shall not be subject to the requirements of subparagraph (k)(1)(A).

~~(2)~~ ~~Use of Existing Performance Test~~

~~(A)~~ ~~A performance test conducted prior to July 24, 1997 may be used to demonstrate compliance with applicable interim emission standards specified in (c)(8), (c)(9), (c)(10), and (d)(5), or the mg/dscm emission standard in (c)(14) provided the existing source test is approved by the Executive Officer.~~

~~(B)~~ ~~A performance test conducted after January 1, 2000 may be used to demonstrate compliance with emission standards of paragraph (c)(11) or (c)(14) upon District approval. The owner or operator of the facility shall submit the subject performance test to the District's Compliance Division by February 24, 2009 for evaluation, and shall meet, at a minimum, the following criteria:~~

~~(i)~~ ~~The test demonstrated compliance with the applicable emission limits of paragraph (c)(11) or (c)(14); and~~

~~(ii)~~ ~~The test is representative of the method to control emissions currently in use as of December 5, 2008; and~~

~~(iii)~~ ~~The test was conducted using one of the approved test methods specified in paragraph (e)(3).~~

(k) (~~3~~2) Approved Test Methods

(A) Emissions testing shall be conducted in accordance with one of the following test methods:

(i) CARB Test Method 425, last amended July 28, 1997, (section 94135, Title 17, California Code of Regulations (CCR)); or

(ii) U.S. EPA Method 306, (40 CFR 63 Appendix A) with a minimum of three test runs; or

(iii) SCAQMD Method 205.1, for results reported as total chromium.

(B) Emissions testing ~~from the cover of electroplating and anodizing tanks~~for add-on non-ventilated air pollution control devices shall be conducted in accordance with a Smoke Test for Add-on Non-Ventilated Air Pollution Control Device(s) ~~to Verify the Seal~~

~~Integrity of Covers Designed to Reduce Chromium Emissions from Electroplating and Anodizing Tanks procedures~~ (See Appendix 5).

(C) Surface tension using a tensiometer shall be measured in accordance with U.S. EPA Method 306B (40 CFR 63 Appendix A). Surface tension using a stalagmometer shall be measured using the procedure set forth in Appendix ~~10~~9, or an alternative procedure approved by the ~~District~~ Executive Officer.

(k) (3) Use of Emissions Screening Tests

(A) The owner or operator of a facility that elects to use an emissions screening test in lieu of a source test to comply with the subsequent source test requirements in Table 3 - Source Tests Schedule shall conduct an emissions screening test:

(i) Consisting of one run to evaluate the hexavalent chromium emissions for a Tier II or Tier III Hexavalent Chromium Tank;

(ii) In accordance with a source test protocol approved by the Executive Officer; and

(iii) Representative of the operating conditions during the most recent source test.

(B) The owner or operator of a facility may conduct an emissions screening test in lieu of a source test to comply with the requirements for an initial source test in Table 3 – Source Tests Schedule provided:

(i) The emissions screening test meets the requirements of clauses (k)(3)(A)(i) through (iii);

(ii) The owner or operator of a facility conducted a source test after January 1, 2009 that meets the requirements of clauses (k)(1)(C)(i) through (iii); and

(iii) No later than [30 days after Date of Rule Adoption], an owner or operator of a facility using a source test that is not approved to satisfy clause (k)(3)(B)(ii) shall submit the source test to the Executive Officer for approval.

(C) Within 30 days of receiving the results, the owner or operator of a facility shall submit the results of the emissions screening test to the Executive Officer.

(D) The owner or operator of a facility shall conduct a source test using an approved test method specified under paragraph (k)(2) within 60 days of conducting an emissions screening test that:

(i) Failed the capture efficiency test(s) specified in the source test protocol;

(ii) Exceeded an emission limit specified in the SCAQMD Permit to Operate; or

(iii) Exceeded an emission standard specified in subdivision (h).

(k) (4) ~~Pre-Test~~Source Test Protocol

~~(A) Facilities subject to the provisions of paragraph (e)(1), above, that are either installing new equipment or modifying existing equipment, shall submit a pre-test protocol at least 60 days prior to conducting a performance test. Facilities that are conducting a performance test for existing equipment that require no modification, shall submit a pre-test protocol to the District's Compliance Division no later than 8 months prior to the applicable effective date of Table 2 of paragraph (c)(11).~~

~~(B)~~(A) The ~~pre-test~~source test protocol shall include the ~~performance~~ source test criteria~~of the end user and~~ , all assumptions, required data, and calculated targets for testing the following:

(i) ~~t~~Target chromium concentration;

(ii) ~~p~~Preliminary chromium analytical data; and

(iii) ~~p~~Planned sampling parameters.

~~(C) In addition, the pre-test protocol shall include information on equipment, logistics, personnel, and other resources necessary for an efficient and coordinated test.~~

~~(D)~~(B) The most recent SCAQMD approved source test protocol may be used for subsequent source tests, provided there are no changes to the tank dimensions, collection slots, ventilation flow rate, sampling location(s), sampling method, or analytic method(s).

(k) (5) Emission Points Test Requirements

Each emission point subject to the requirements of this rule shall be tested unless a waiver is granted by U.S. EPA and approved by the Executive Officer.

~~(6) For any interim alternative compliance option in subdivision (d) that requires the results of a performance test to demonstrate facility-wide emissions or~~

~~cancer risk, or any facility operating under an alternative compliance method pursuant to paragraph (d)(6), the owner or operator shall submit a performance test conducted pursuant to subdivision (e).~~

(k) ~~(7)~~ ~~(A)~~(6) Capture Efficiency

The owner or operator of a facility that is required to conduct a source test pursuant to subdivision (k) shall ~~using an add-on air pollution control device to comply with the requirements of paragraphs (c)(8) through (c)(13), (d)(5), (d)(6), or any source electing to comply with the mg/dscm emission standard in paragraph (c)(14), shall that all emissions are captured by using a quantitative measurement approved by the District. The demonstration shall be made during any performance test specified in paragraph (e)(1) conducted after December 5, 2008. An example of an approved quantitative measurement is demonstrating that the capture system meets the design criteria and ventilation velocities specified in the American Conference of Governmental Hygienists Industrial Ventilation, A Manual of Recommended Practice.~~ demonstrate that each add on-air pollution control device meets the design criteria and ventilation velocities specified in *A Manual of Recommended Practice for Design* authored by the American Conference of Governmental Industrial Hygienists or alternative design criteria and ventilation velocities approved by the Executive Officer.

(k) ~~(B)~~(7) Smoke Test

The owner or operator of a facility ~~subject to (e)(7)(A) shall periodically conduct a smoke test in order to demonstrate continuous compliance with the capture efficiency of the ventilation system air pollution control device or add-on non-ventilated air pollution control device. The test shall be :~~ shall conduct an acceptable smoke test for each add-on air pollution control device pursuant to Appendix 5 and each add-on non-ventilated air pollution control device pursuant to Appendix 8.

~~(i)~~ ~~Conducted using the method described in Appendix 9, or any other method deemed acceptable by the Executive Officer;~~

~~(ii)~~ ~~Conducted initially upon start-up for new and modified facilities, and within 60 days of the effective date of this rule for existing facilities; and~~

~~(iii)~~ ~~Conducted periodically by the facility at least once every six months of a previously conducted test.~~

~~(C)~~ ~~The owner or operator of a ventilation system that demonstrates non-compliance with any smoke test shall immediately shutdown, upon discovery, all electroplating or anodizing lines associated with such ventilation systems until a smoke test demonstrating full compliance with subparagraph (e)(7)(B) is achieved.~~

~~(f)~~(l) Certification and Approval of Wetting Agent Chemical Fume Suppressants

~~(1)~~ ~~Any wetting agent chemical fume suppressant used to comply with the requirements of this rule shall be certified by the Executive Officer as able to reduce or suppress hexavalent chromium emissions at the surface of an electroplating or anodizing bath through the reduction of surface tension of the bath to a level at which an emission factor below 0.01 milligrams per ampere hour is achieved. Wetting agent chemical fume suppressants shall meet, at a minimum, a surface tension below 45 dynes/cm, as measured by a stalagmometer, or below 35 dynes/cm, as measured by a tensiometer, unless an alternative is approved pursuant to subdivision (m). The Executive Officer will publish and periodically update a list of certified chemical fume suppressants.~~

(l) (1) The owner or operator of a facility shall not add PFOS based chemical fume suppressants to any chromium electroplating or chromic acid anodizing bath.

(l) (2) The owner or operator of a facility that elects to use a wetting agent chemical fume suppressant to comply with the requirements of this rule shall only use a wetting agent chemical fume suppressant(s) that:

(A) Reduces or suppresses hexavalent chromium emissions at the surface of an electroplating or anodizing bath to meet an emission factor below 0.01 milligrams per ampere hour,

(B) Meets a surface tension below 40 dynes/cm, as measured by a stalagmometer, or below 33 dynes/cm, as measured by a tensiometer, unless an alternative is approved pursuant to subdivision (q), and

(C) Has been certified by the Executive Officer based on a certification process conducted by SCAQMD and CARB.

(l) (3) The owner or operator of a facility shall use a certified wetting agent chemical fume suppressant in accordance with the certification and applicable manufacturer's specifications.

(l) (4) No later than January 1, 2020, the owner or operator of a facility shall be notified by the Executive Officer the status of:

(A) Any wetting agent chemical fume suppressant available on and after July 1, 2021 that meets the requirements specified in paragraphs (1)(2); and

(B) Any potential wetting agent chemical fume suppressant going through the certification process conducted by SCAQMD and CARB.

(l) (5) If a wetting agent chemical fume suppressant will not be available by July 1, 2021, the owner or operator of a facility shall only add a wetting agent chemical fume suppressant to a chromium electroplating or chromic acid anodizing tank based on the information in the notice as specified by paragraph (l)(4) and:

(A) On or before July 1, 2021, meet the hexavalent chromium emission limit specified in Table 1 – Hexavalent Chromium Emission Limits for Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks;

(B) On or before July 1, 2022, phase-out the use of hexavalent chromium in the chromium electroplating or chromic acid anodizing tanks that use a wetting agent chemical fume suppressant that meets the requirements of paragraph (l)(6); or

(C) On or before July 1, 2021 implement an alternative to a wetting agent chemical fume suppressant that meets the requirements of paragraph (l)(7).

(l) (6) The owner or operator of a facility that elects to meet the requirements of paragraph (l)(5) by phasing out the use of hexavalent chromium in a chromium electroplating or chromic acid anodizing tank shall:

(i) No later than January 1, 2021, submit a written and signed commitment to the Executive Officer stating that the facility will phase out by July 1, 2022, the use of hexavalent chromium in the electroplating or chromic acid anodizing tank(s) that use a wetting agent chemical fume suppressant.

(ii) No later than July 1, 2022 cease operating and surrender SCAQMD permits to operate the chromium electroplating or chromic acid anodizing tank(s) that use a wetting agent chemical fume suppressant.

(l) (7) The owner or operator of a facility that elects to meet the requirements of paragraph (l)(5) by implementing an alternative to a wetting agent chemical fume suppressant, shall submit a permit application for the chromium electroplating or chromic acid anodizing tank(s) that includes the alternative and any conditions specified in the approval of the alternative in paragraph (l)(8).

(l) (8) The alternative to a wetting agent chemical fume suppressant specified in paragraph (l)(7) shall:

(A) Meet an emission limit that is equally effective as the emission limit required for a wetting agent chemical fume suppressant specified in subpargraph (l)(2)(A);

(B) Be approved by the Executive Officer in consultation with CARB to meet the requirement specified in subparagraph (l)(2)(A); and

(C) Be used by the owner or operator in accordance with the approval specified in subparagraph (l)(8)(B).

(l) (9) An owner or operator of a facility that fails to phase out the use of hexavalent chromium by July 1, 2022 pursuant to paragraph (l)(6) will be required to cease operation of the electroplating or chromic acid anodizing tank that contains hexavalent chromium until the facility can meet the emission limits specified in paragraph (h)(2) for the subject tank.

(~~g~~m) Parameter Monitoring

(m) (1) Add-On Air Pollution Control Device(s) and Add-On Non Ventilated Air Pollution Control Device(s)

~~(A) Pressure Drop~~

~~The owner or operator shall continuously monitor the pressure drop across an add-on air pollution control device such as a composite mesh-pad (CMP), packed-bed scrubber (PBS), a CMP/PBS, fiber-bed mist eliminator, and a High Efficiency Particulate Arrestors (HEPA) filter with a mechanical gauge. The gauge shall be located~~

~~so that it can be easily visible and in clear sight of the operation or maintenance personnel. The pressure drop shall be maintained within ± 1 inch of water of the value established during the performance test to demonstrate compliance with the emission limitation for CMP, PBS, a CMP/PBS, and a fiber-bed mist eliminator. The pressure drop shall be maintained within –1/2 times to +2 times the inches of water of the value established during the performance test to demonstrate compliance with the emission limitation for HEPA filters.~~

~~(B)~~(A) ~~Inlet Velocity~~ Pressure and Air Flow

The owner or operator of a facility shall continuously monitor the operation of the add-on air pollution control device by: ~~continuously monitor the inlet velocity pressure of a packed-bed scrubber with a mechanical gauge. The gauge shall be located so that it is easily visible and in clear sight of the operation or maintenance personnel. The inlet velocity pressure shall be maintained within ± 10 percent of the value established during the performance test to demonstrate compliance with the emission limitation.~~

(i) Installing and maintaining a device to measure the applicable pressures and air flows specified in Table 4 — Pressure and Air Flow Measurement Parameters;

(ii) Installing each device so that it is accessible and in clear sight of the operation or maintenance personnel;

(iii) Maintaining all parameters identified in Table 4 — Pressure and Air Flow Measurement Parameters within the range specified in the facility's SCAQMD Permit to Operate;

(iv) Labeling each mechanical gauge with the corresponding acceptable operating ranges established during the most recent source test and within the range specified in the SCAQMD Permit to Operate; and

(v) Maintaining the mechanical gauges in accordance to the requirements in Appendix 4.

Table 4:
Pressure and Air Flow Measurement Parameters

Permitted Air Pollution Control Technique	**Location**	**Parameter Monitored**	**Units**	**Monitoring Start Date**
Push-Pull Systems	Push Manifold	Static Pressure	Inches of water	60 Days After Completion of Initial Source Test or within [60 Days of Date of Rule Adoption]
All	Collection Manifold or Any Location within the System Using a Flow Meter	Static Pressure or Volumetric Flow Rate	Inches of water or Actual Cubic Feet per Minute	60 Days After Completion of Initial Source Test or within [60 Days of Date of Rule Adoption]
Existing on or Before [Date of Rule Adoption]	Across Each Stage of the Control Device	Differential Pressure	Inches of water	[Date of Rule Adoption]
Installed after [Date of Rule Adoption]	Across Each Stage of the Control Device	Differential Pressure	Inches of water	60 Days After Completion of Initial Source Test

(B) Velocity of Collection Slots

Beginning 60 days after the completion of the initial source test required in Table 3 – Source Tests Schedule and at least once every 180 days thereafter, the owner or operator of a facility shall demonstrate that emissions are captured by the add-on air pollution control device that meets the requirements in Table 5 – Add-on Air Pollution Control Device Parameter Monitoring using any of the following:

(i) A hot-wire anemometer;

(ii) A vane anemometer; or

(iii) A device or method approved by the Executive Officer.

Table 5: Add-on Air Pollution Control Device Parameter Monitoring

	Collection Slot(s) Velocity[1]	**Push Air Manifold Pressure (for push-pull systems only)**	**Required Action**
Row 1: Acceptable Measurement	> 95% of the most recent passing source test or emission	95-105% compared to the most recent	None

	screening; or ≥ 2,000 fpm	passing source test or emission screening	
Row 2: Repairable Measurement	90-95% of the most recent passing source test or emission screening test, or < 2,000 fpm and > 1,800 fpm	90-95% or 105-110% of the most recent passing source test or emission screening test	Repair or replace, and re-measure within 3 calendar days of measurement
Row 3: Failing Measurement	< 90% of the most recent passing source test or emission screening test, or <1,800 fpm	> 110% or < 90% of the most recent passing source test or emission screening test	Immediately shut down any tanks controlled by the add-on air pollution control device that had a failing measurement

[1] If the measured slot velocity appears in multiple rows, the owner or operator shall implement the required action in the lower numbered row. For example the owner or operator would implement the required action in Row 2, if the measured slot velocity shows a repairable measurement (row 2) or a failing measurement (row 3).

(C) Repairable Measurements

The owner or operator of a facility with an add-on air pollution control device for a Tier II or Tier III Hexavalent Chromium Tank that demonstrates a repairable measurement according to Table 5 – Add-on Air Pollution Control Device Parameter Monitoring shall:

(i) Perform the required action specified in Table 5 – Add-on Air Pollution Control Device Parameter Monitoring for a repairable measurement,

(ii) Demonstrate an acceptable measurement within the time period established for the required action specified in Table 5 – Add-on Air Pollution Control Device Parameter Monitoring, and

(iii) Immediately shutdown the Tier II or Tier III Hexavalent Chromium Tank if an acceptable measurement is not demonstrated within the time period established for the required action specified in Table 5 – Add-on Air Pollution Control Device Parameter Monitoring. The tank shall remain shutdown until an acceptable measurement is measured.

(D) Failing Measurement

The owner or operator of a facility with an add-on air pollution control device for a Tier II or Tier III Hexavalent Chroium Tank that demonstrates a failing measurement according to Table 5 – Add-on Air Pollution Control Device Parameter Monitoring shall perform the required action specified in Table 5 – Add-on Air

Pollution Control Device Parameter Monitoring for a failing measurement. The tank shall remain shutdown until an acceptable measurement is measured.

(E) Smoke Test Requirements

Once every 180 days the owner or operator of a facility subject to subparagraph (k)(7) shall conduct a smoke test:

(i) Using a method described in Appendix 5, Appendix 8, or any other method deemed acceptable by the Executive Officer; and

(ii) Within 30 days of start-up for new and modified add-on air pollution control devices or add-on non-ventilated air pollution control devices.

(F) Failure of Smoke Test

The owner or operator of a facility shall immediately shut down all Tier II and Tier III Hexavalent Chromium Tanks associated with the add-on air pollution control device or add-on non-ventilated air pollution control device if an acceptable smoke test for each add-on air pollution control device pursuant to Appendix 5 and each add-on non-ventilated air pollution control device pursuant to Appendix 8 is not conducted. The Tier II and Tier III Hexavalent Chromium Tank shall remain shut down until an acceptable smoke test is conducted.

(G) HEPA Filters

Beginning 60 days after completion of the initial source test required by subdivision (k), the owner or operator of a facility with an add-on air pollution control device equipped with HEPA filters shall ensure that the device to monitor pressure drop pursuant to subparagraph (m)(1)(A):

(i) Is equipped with ports to allow for periodic calibration in accordance with manufacturer specifications;

(ii) Is calibrated according to manufacturer specifications at least once every calendar year; and

(iii) Is maintained in accordance with manufacturer specifications.

(m) (2) Wetting Agent Chemical Fume Suppressants (Excluding Decorative Chromium Electroplating Tanks Using a Trivalent Chromium Bath)

(A) The owner or operator of a facility shall monitor the surface tension of the chromium electroplating or chromic acid anodizing tank that contains a certified wetting agent chemical fume suppressant with either a stalagmometer or tensiometer using the applicable method pursuant to subparagraph ~~(e)(3)(C)~~(k)(2)(C). The surface tension shall be maintained below the respective value established in the list of certified wetting agent chemical fume suppressants pursuant to subdivision ~~(f)~~(l), or at or below a ~~more stringent~~ value specified in the SCAQMD Permit to Operate~~ conditions or approved Compliance Plan conditions~~. ~~Surface tension shall be measured daily for 20 operating days, and weekly thereafter as long as there is no violation of the surface tension requirement. If a violation occurs, the measurement frequency shall return to daily for 20 operating days, and weekly thereafter.~~

(B) The owner or operator of a facility shall measure the surface tension every third operating day but not less than once per week.

(C) If at any time the surface tension required by subparagraph (m)(2)(A) is not maintained, the owner or operator of a facility shall measure the surface tension:

(i) Daily for 20 consecutive operating days; and

(ii) Resume the measurement schedule pursuant to subparagraph (m)(2)(B).

(D~~B~~) The owner or operator of a facility operating under an approved alternative compliance method pursuant to ~~paragraph (d)(6)~~subdivision (i), and using chemical fume suppressants as all or partial control of hexavalent chromium emissions ~~must~~ shall measure and monitor the surface tension of the electroplating or anodizing ~~bath~~ bath each operating day ~~daily~~. The surface tension ~~must~~ shall be maintained at or below the surface tension measured during the ~~performance~~source test.

(m) (3) Fume Suppressants Forming a Foam Blanket

(A) The owner or operator of a facility shall maintain the foam blanket thickness across the surface of the chromium electroplating or chromic acid anodizing tank established during the most recently approved source test to demonstrate compliance with the emission limit specified in paragraphs (h)(2) or (h)(4).

(B) The owner or operator of a facility shall measure the foam blanket thickness each operating day.

(C) If at any time the foam blanket thickness required by subparagraph (m)(3)(A) is not maintained, the owner or operator of a facility shall measure the foam blanket thickness:

(i) Hourly for 15 consecutive operating days; and

(ii) Resume the measurement schedule pursuant to subparagraph (m)(3)(B).

~~The owner or operator shall monitor the foam blanket thickness across the surface of the chromium electroplating or chromic acid anodizing tank. The foam blanket thicknessshall be maintained consistent with the requirements established during the performance test to demonstrate compliance with the emission limitation. Foam thickness shall be measured hourly for 15 operating days, and daily thereafter as long as there is no violation of the foam thickness requirement. If a violation occurs, the measurement frequency shall return to hourly for 15 operating days, and daily thereafter.~~

(m) (4) Polyballs or Similar Mechanical Fume Suppressants

The owner or operator of a facility shall visually inspect the Tier II or Tier III Hexavalent Chromium Tank ~~chromium electroplating or chromic acid anodizing tank for~~and maintain coverage comparable to the coverage during the ~~performance~~ source test ~~daily~~each operating day.

(~~h~~n) Inspection~~, and~~ Operation, and Maintenance Requirements

(n) (1) Inspection and Maintenance

(A) The owner or operator of a facility using an add-on air pollution control device or add-on non-ventilated air pollution control device shall comply with the applicable inspection and maintenance requirements listed in Table 4-1 of Appendix 4.

(B) The owner or operator of a facility using an add-on air pollution control device or add-on non-ventilated air pollution control device custom designed for a specific operation shall develop operating and maintenance requirements for approval by the Executive

Officer. The requirements and frequency of inspection shall be sufficient to ensure compliance.

~~Owners or operators of hexavalent chromium electroplating and chromic acid anodizing operations using an add-on air pollution control device shall comply with the applicable inspection and maintenance requirements listed in Table 4. The owner or operator of an add-on air pollution control device custom designed for a specific operation shall develop operating and maintenance requirements. The requirements shall be submitted to the District for review and approval no later than 120 days after the effective date of this rule for custom systems existing before December 5, 2008, and prior to initial start-up for custom systems installed on or after December 5, 2008. The requirements and frequency of inspection must be sufficient to ensure compliance.~~

~~Table 4~~
~~Summary of Inspection and Maintenance Requirements for Sources Using Add-on Air Pollution Control Device(s)~~

~~Control Technique/Equipment~~	~~Inspection and Maintenance Requirements~~	~~Frequency~~
~~Composite mesh-pad (CMP) system.~~	~~1. Visually inspect device to ensure that there is proper drainage, no unusual chromic acid buildup on the pads, and no evidence of chemical attack that affects the structural integrity of the device.~~	~~1. Once per quarter.~~
	~~2. Visually inspect back portion of the mesh pad closest to the fan to ensure there is no breakthrough of chromic acid mist.~~	~~2. Once per quarter.~~

~~Table 4~~
~~Summary of Inspection and Maintenance Requirements for Sources Using Add-on Air Pollution Control Device(s) (cont)~~

~~Control Technique/Equipment~~	~~Inspection and Maintenance Requirements~~	~~Frequency~~
	~~3. Visually inspect ductwork from tank to the control device to ensure there are no leaks.~~ ~~4. Perform washdown of the composite mesh-pads in accordance with manufacturer's recommendations.~~	~~3. Once per quarter.~~ ~~4. Per manufacturer.~~
~~Packed-bed scrubber (PBS)~~	~~1. Visually inspect device to ensure there is proper drainage, no unusual chromic acid buildup on the packed-beds, and no evidence of chemical attack that affects the structural integrity of the device.~~ ~~2. Visually inspect back portion of the chevron blade mist eliminator to ensure that it is dry and there is no breakthrough of chromic acid mist.~~ ~~3. Same as number 3 above for CMP system.~~ ~~4. Add fresh makeup water to the packed-bed[A].~~	~~1. Once per quarter.~~ ~~2. Once per quarter.~~ ~~3. Once per quarter.~~ ~~Whenever makeup is added.~~
~~PBS/CMP system~~	~~1. Same as for CMP system.~~ ~~2. Same as for CMP system.~~	~~1. Once per quarter.~~ ~~2. Once per quarter.~~
	~~3. Same as for CMP system.~~ ~~4. Same as for CMP system~~	~~3. Once per quarter.~~ ~~4. Per manufacturer.~~

[A] ~~Horizontal packed-bed scrubbers without continuous recirculation must add make-up water to the top of the packed-bed.~~

~~Table 4~~

~~Summary of Inspection and Maintenance Requirements for Sources Using Add-on Air Pollution Control Device(s) (cont)~~

~~Control Technique/Equipment~~	~~Inspection and Maintenance Requirements~~	~~Frequency~~
~~Fiber-bed mist eliminator[B]~~	~~1. Visually inspect fiber-bed unit and prefiltering device to ensure there is proper drainage, no unusual chromic acid buildup in the units, and no evidence of chemical attack that affects the structural integrity of the devices.~~ ~~2. Visually inspect ductwork from tank or tanks to the control device to ensure there are no leaks.~~ ~~3. Perform washdown of fiber elements in accordance with manufacturer's recommendations.~~	~~1. Once per quarter.~~ ~~2. Once per quarter.~~ ~~3. Per manufacturer.~~
~~High Efficiency Particulate Arrestors filter (HEPA)~~	~~1. Look for changes in the pressure drop.~~ ~~2. Replace HEPA filter.~~	~~1. Once per week.~~ ~~2. Per manu-facturer's specifications or District's requirement.~~
~~Chromium Tank Covers~~	~~1. Drain the air-inlet (purge air) valves at the end of each day that the tank is in operation.~~ ~~2. Visually inspect access door seals and membranes for integrity.~~ ~~3. Drain the evacuation unit directly into the electroplating tank or into the rinse tanks (for recycle into the electroplating tank).~~	~~1. Once per day.~~ ~~2. Once per week.~~ ~~3. Once per week.~~

~~[B] Inspection and maintenance requirements for the control device installed upstream of the fiber-bed mist eliminator to prevent plugging do not apply as long as the inspection and maintenance requirements for the fiber-bed unit are followed.~~

~~Table 4~~
~~Summary of Inspection and Maintenance Requirements for Sources Using Add-on Air Pollution Control Device(s) (cont)~~

~~Control Technique/Equipment~~	~~Inspection and Maintenance Requirements~~	~~Frequency~~
	~~4. Visually inspect membranes for perforations using a light source that adequately illuminates the membrane (e.g., Grainger model No. 6X971 Fluorescent Hand Lamp).~~ ~~5. Visually inspect all clamps for proper operation; replace as needed.~~ ~~6. Clean or replace filters on evacuation unit.~~ ~~7. Visually inspect piping to, piping from, and body of evacuation unit to ensure there are no leaks and no evidence of chemical attack.~~ ~~8. Replace access door seals, membrane evacuation unit filter, and purge air inlet check valves in accordance with the manufacturer's recommendations.~~	~~4. Once per month.~~ ~~5. Once per month.~~ ~~6. Once per month.~~ ~~7. Once per quarter.~~ ~~8. Per manufacturer.~~
~~Pitot tube~~	~~Backflush with water, or remove from the duct and rinse with fresh water. Replace in the duct and rotate 180 degrees to ensure that the same zero reading is obtained. Check Pitot tube ends for damage. Replace Pitot tube if cracked or fatigued.~~	~~Once per quarter.~~
~~Ampere-hour meter~~	~~Install and maintain per manufacturer's specifications.~~	~~Per manufacturer.~~

(n) (2) ~~Hard and decorative chromium electroplating, and chromic acid anodizing operations~~ The owner or operator of a facility using chemical fume suppressants ~~(i.e. wetting agent, foam)~~ or mechanical fume suppressants ~~(i.e., polyballs)~~ shall comply with the applicable inspection and maintenance requirements in Table 4-4 of Appendix 4.

(n) (3) Beginning [90 Days After Date of Rule Adoption], the owner or operator of a facility operating a Tier II Hexavalent Chromium Tank that is not controlled by an add-on air pollution control device shall comply with the applicable inspection and maintenance requirements in Table 4-3 of Appendix 4.

(n) (4) Beginning [90 Days After Date of Rule Adoption], the owner or operator of a facility operating a Tier I, Tier II, and Tier III Hexavalent Chromium Tank shall comply with the applicable inspection and maintenance requirements in Table 4-2 of Appendix 4.

~~Table 5~~

~~Summary of Inspection and Maintenance Requirements for Sources Using Chemical or Mechanical Fume Suppressants~~

~~Equipment~~	~~Inspection and Maintenance Requirement for Monitoring Equipment~~	~~Frequency~~
~~Ampere-hour meter~~	~~Install and maintain per manufacturer's specifications.~~	~~Per manufacturer.~~
~~Stalagmometer/ Tensiometer~~	~~Calibrate and maintain per manufacturer's specifications.~~	

~~(i) Operation and Maintenance Plan Requirements~~

(n) ~~(1)~~(5) Operation and Maintenance Plan

The owner or operator of a facility subject to the inspection and maintenance requirements of paragraphs ~~(h)(1) and (h)(2)~~(n)(1), (n)(2), (n)(3), or (n)(4) shall prepare an operation and maintenance plan. For major sources, the plan shall be incorporated by reference into the source's Title V permit. The plan shall incorporate the inspection and maintenance requirements for that device or monitoring equipment, as identified in Tables 4-1, ~~and~~ 4-2, 4-3, and 4-4~~5~~ of Appendix 4, and shall include the following elements:

(A) A standardized checklist to document the operation and maintenance of the source, the add-on air pollution control device, and the process and control system monitoring equipment; and

(B) Procedures to be followed to ensure that equipment is properly maintained.

~~T~~t~~he owner or operator may use applicable standard operating procedure (SOP) manuals, Occupational Safety and Health Administration (OSHA) plans, or other existing plans, provided the alternative plans meet the requirements of this subdivision.~~

(n) (6) Notwithstanding the operation and maintenance plan required by paragraph (n)(5), the owner or operator of a facility may use applicable standard operating procedure (SOP) manuals, Occupational Safety and Health Administration (OSHA) plans, or other existing plans, provided the alternative plans meet the requirements of this subdivision.

(n) ~~(2)~~(7) Operation and Maintenance Plan Availability

The owner or operator of a facility shall keep the written operation and maintenance plan on record after it is developed, to be made available for inspection, upon request.

(n) ~~(3)~~(8) Operation and Maintenance Plan Modifications

Any changes made by the owner or operator of a facility ~~should~~ shall be documented in an addendum to the plan. In addition, the owner or operator of a facility shall keep previous (i.e., superseded) versions of the operation and maintenance plan on record to be made available for inspection, upon request, for a period of 5 years after each revision to the plan.

~~(4) Breakdown Provisions In Operation and Maintenance Plan~~

~~The operation and maintenance plan shall be revised as necessary to minimize breakdowns.~~

(n) (9) Amended Operation and Maintenance Plan

No later than [90 Days After Date of Rule Adoption], the facility's operation and maintenance plan shall be revised and made available upon request to the Executive Officer to reflect the incorporation of the inspection and maintenance requirements for a device or monitoring equipment that is identified in Table 4-2 and Table 4-3 of Appendix 4 and shall include the elements required in subparagraphs (n)(5)(A) and (n)(5)(B).

(n) (10) Replacement of Ampere-Hour Meter

Prior to replacement of a continuous recording non-resettable ampere-hour meter that is required under paragraph (d)(1), the owner or operator of a facility shall photograph the actual ampere-hour reading of:

(A) The ampere-hour meter being replaced; and

(B) The new ampere-hour meter immediately after installation.

(~~j~~o) Recordkeeping

(o) (1) Inspection ~~r~~Records for ~~s~~Sources ~~u~~Using an ~~a~~Add-on ~~control a~~Air ~~p~~Pollution ~~c~~Control ~~d~~Device~~s~~ or Non-Ventilated Air Pollution Control Device ~~:~~

The owner or operator of a facility shall maintain inspection records to document that the inspection and maintenance requirements of subdivision ~~(h)~~(n) ~~and Tables 4 and 5~~, and that the provisions of the operation and maintenance plan required by subdivision ~~(i)~~(n) have been met. The record can take the form of a checklist and ~~should~~shall identify:

(A) ~~t~~The device inspected;

(B) ~~t~~The date and time of inspection;

(C) ~~a~~A brief description of the working condition of the device during the inspection;

(D) ~~m~~Maintenance activities performed on the components of the air pollution control system (i.e. duct work replacement, filter pad replacement, fan replacement, etc.); and

(E) ~~a~~Any actions taken to correct deficiencies found during the inspection.

(o) (2) Inspection Records for Sources Using Chemical ~~Fume Suppressants (i.e. wetting agent, foam)~~ or Mechanical Fume Suppressants ~~(i.e., polyballs).~~

The owner or operator of a facility shall maintain inspection records to document that the applicable inspection and maintenance requirements of paragraphs ~~(h)(2)~~(n)(1), (n)(2), (n)(3), and (n)(4) ~~and Tables 4 and 5~~ have been met. The record can take the form of a checklist.

(o) (3) ~~Performance~~ Source Test, Capture Efficiency, and Smoke Test Records

The owner or operator of a facility shall maintain ~~test reports and records documenting~~ the conditions and results of all ~~performance~~ source tests, capture efficiency tests, emissions screening test, and smoke tests required by subdivision (k)~~(e)~~. The records shall include ~~performance~~ source test results required to determine compliance with paragraph ~~(g)(1)~~(m)(1), including the pressure drop established during the ~~performance~~ source test to demonstrate compliance with the applicable emission limitation ~~for composite mesh pad (CMP), packed bed scrubber (PBS), and CMP/PBS, and a fiber-bed mist eliminator and the inlet velocity pressure established during the performance test to demonstrate compliance with the emission limitation~~.

(o) (4) Monitoring Data Records

The owner or operator of a facility shall maintain records of continuously recorded ampere-hour data required by paragraph ~~(c)~~(d)(1) and monitoring data required by subdivision (m)~~(g) that are used to demonstrate compliance with the requirements of subdivision (c) and subdivision (d), if applicable, including the date and time the data are collected~~.

(A) Cumulative Rectifier Usage Records

The owner or operator of a facility shall, on a monthly basis, record the actual cumulative rectifier usage expended during each month of the reporting period, and the total usage expended to date.

~~(B)~~ ~~Pressure Drop~~

~~The owner or operator shall record the pressure drop once a week. The pressure drop shall be recorded daily beginning February 1, 2009.~~

(B)~~(C)~~ ~~Inlet Velocity~~ Pressure and Air Flow Measurements

The owner or operator of a facility shall record the ~~inlet velocity~~applicable pressures and air flow as specified in Table 5 – Add-on Air Pollution Control Device Parameter Monitoring of subdivision (m) once a week.~~ The inlet velocity pressure shall be recorded daily beginning February 1, 2009.~~

(o) (5) ~~(D)~~ Surface Tension Records

~~(i)~~(A) The owner or operator of a facility shall record the surface tension pursuant to the requirements of paragraph (m)(2).~~daily for 20 operating days, and weekly thereafter as long as there is no violation of the surface tension requirement. If the surface tension exceeds the respective value established in the list of certified chemical fume suppressants pursuant to subdivision (f), or a more stringent value specified in permit conditions or approved Compliance Plan conditions, the owner or operator shall again record the surface tension daily for 20 operating days, and weekly thereafter~~

~~(ii)~~(B) For facilities operating under an approved alternative compliance method pursuant to ~~paragraph (d)(6)~~subdivision (i), and using chemical fume suppressants as all or partial control of hexavalent chromium emissions, the owner or operator of the facility shall record the surface tension of the electroplating or anodizing bath daily.

(o) (6) Mechanical Fume Suppressant and Foam Blankets Records

(A) The owner or operator of a facility that is required to measure the foam blanket thickness pursuant to paragraph (m)(3), shall record the foam thickness.

(B) The owner or operator of a facility using polyballs or other mechanical fume suppressants to comply with the emission standards of subdivision (h) or (i), shall record the coverage of the electroplating or anodizing bath daily. Coverage shall be reported as a percentage of bath surface area.

~~(E) Mechanical Fume Suppressant and Foam Blankets~~

~~(i) The owner or operator using a foam blanket to comply with the emission standards of subdivision (c) or (d), shall record the foam thickness~~. ~~hourly for 15 operating days, and daily thereafter as long as there is no violation of the foam thickness requirement. If a violation occurs, the measurement frequency shall return to hourly for 15 operating days, and daily thereafter.~~

~~(ii) The owner or operator using polyballs or other mechanical fume suppressants to comply with the emission standards of subdivision (c) or (d), shall record the coverage of the electroplating or anodizing bath daily. Coverage shall be reported as a percentage of bath surface area.~~

~~(5) Breakdown Records~~

~~The owner or operator shall maintain records of the occurrence, duration, and cause (if known) and action taken on each breakdown.~~

(o) ~~(6)~~(7) Records of Excesses

The owner or operator of a facility shall maintain records of exceedances of: the emission limitations in subdivisions ~~(c) and (d)~~(h) and (i), the parameter monitoring ~~parameter~~ values established under subdivision ~~(g)~~(m), or any site-specific operating parameters established for alternative equipment. The records shall include the date of the occurrence, the duration, cause (if known), and, where possible, the magnitude of any excess emissions.

(o) (8) Housekeeping and Best Management Practice Records

~~(7)~~ The owner or operator of a facility shall maintain records demonstrating compliance with housekeeping practices and best management practices, as required by ~~paragraph (c)(4)~~subdivisions (f) and (g), including the dates on which specific activities were completed, and records showing that chromium or chromium-containing wastes have been stored, disposed of, recovered, or recycled using practices that do not lead to fugitive emissions~~dust~~.

(o) ~~(8)~~(9) Records of Fume Suppressant Additions

For sources using fume suppressants to comply with the standards, the owner or operator of a facility shall maintain records of the date, time, approximate volume, and product identification of the fume suppressants that are added to the electroplating or anodizing bath.

(o) ~~(9)~~(10) Records of Trivalent Bath Components

For sources complying with paragraph ~~(c)(14)~~(h)(3) using trivalent chromium baths, the owner or operator of a facility shall maintain records of the bath components purchased, with the wetting agent clearly identified as a bath constituent contained in one of the components.

(o) ~~(10)~~(11) Records of Filter Purchase and Disposal

For sources using add-on air pollution control devices to comply with the standards, the owner or operator of a facility shall retain purchase orders for filters and waste manifest records for filter disposal.

~~(11) New/Modified Source Review Information~~

~~The owner or operator shall maintain records supporting the notifications and reports required by the District's new source review provisions and/or subdivision (l).~~

(o) (12) Records Retention

All records shall be maintained for five years, at least two years on site.

(~~k~~p) Reporting

(p) (1) ~~Performance~~ Source Test Documentation

(A) Notification of ~~Performance~~ Source Test

At least 60 calendar days before the source test is scheduled to occur, the owner or operator of a facility shall notify the Executive Officer that a source test will be conducted.

~~(i)~~ ~~The owner or operator of a source shall notify the Executive Officer that a performance test shall be conducted at least 60 calendar days before the performance test is scheduled.~~

~~(ii)~~ ~~The provisions in clause (k)(1)(A)(i), above, do not apply if the performance test was conducted prior to July 24, 1997 and was approved by the Executive Officer and the U.S. EPA.~~

(B) Reports of ~~Performance~~ Source Test Results

The owner or operator of a facility shall report ~~performance~~ source test results to the Executive Officer. Reports of ~~performance~~ source test results shall be submitted no later than 90 calendar days following the completion of the required ~~performance~~ source test, and shall be submitted as part of the notification of compliance status required by paragraphs ~~(k)~~(p)(2) and (p)(3).

(C) The ~~content of performance~~ source test reports shall contain, at a minimum, the information identified in Appendix 1.

(p) (2) Initial Compliance Status Report

An initial compliance status report is required each time that a source becomes subject to the requirements of this rule. The owner or operator of a facility shall submit to the Executive Officer an initial compliance status report, signed by the responsible official who shall certify its accuracy, attesting to whether the source has complied with this rule.

(A) Initial Compliance Status Report Due Date

The initial compliance status report for existing facilities shall be submitted to the Executive Officer no later than April 24, 2008. New or modified facilities shall submit the initial compliance status report upon start-up.

(B) The initial compliance status report shall contain, at a minimum, the information identified in Appendix 2.

(p) (3) Ongoing Compliance Status and Emission Reports

The owner or operator of a facility shall submit a summary report to the Executive Officer to document the ongoing compliance status.

(A) Frequency of Ongoing Compliance Status and Emission Reports

The report shall be submitted each calendar year on or before February 1 for all sources and shall include information covering the preceding calendar year (January 1 through December 31).

(B) The ~~content of~~ ongoing compliance status and emission reports shall, at a minimum, contain the information identified in Appendix 3.

(p) (4) ~~Reports of Breakdowns~~Notification of Incident

(A) The owner or operator of a facility shall ~~report breakdowns as required by District Rule 430~~notify the Executive Officer within four hours of the incident or within four hours from the time the owner or operator of a facility knew or reasonably should have known of, any failed smoke test, any failed source test, any exceedance of a permitted ampere-hour limit, or any malfunction of a non-resettable ampere-hour meter by calling 1-800-CUT SMOG. In the cases of emergencies that prevent the owner or operator of a facility from reporting all required information within the four hour limit, the Executive Officer may extend the time for reporting the required information provided such owner or operator of a facility has notified the Executive Officer of the incident within 24-hours. The notification shall include the following information~~.~~:

(i) Date and time of the incident and when it was discovered;

(ii) Specific location and equipment involved;

(iii) Responsible party to contact for further information;

(iv) Causes of the incident, to the extent known; and

(v) Estimated time for repairs and correction.

(B) Within seven calendar days after a reported incident has been corrected, but no later than thirty calendar days from the initial date of the incident, unless an extension has been approved in writing by the Executive Officer, the owner or operator of a facility shall submit a written incident report to the Executive Officer that includes:

(i) An identification of the equipment involved in causing, or suspected of having caused, or having been affected by the incident;

(ii) The duration of the incident;

(iii) The date of correction and information demonstrating that compliance is achieved;

(iv) An identification of the types of emissions, if any, resulting from the incident;

(v) A quantification of the excess emissions, if any, resulting from the incident and the basis used to quantify the emissions;

(vi) Information substantiating that steps were immediately taken to correct the condition causing the incident, and to minimize the emissions, if any, resulting from the incident;

(vii) Written verification that the facility is operating in compliance with this rule. If the facility is not in compliance with this rule, provide an approximate date the facility is expected to be in compliance;

(viii) A description of the corrective measures undertaken and/or to be undertaken to avoid such an incident in the future; and

(ix) Pictures of the equipment that failed, if available.

(p) (5) Reports Associated with Trivalent Chromium Baths Exclusively Using a Chemical Fume Suppressant Containing a Wetting Agent

Owners or operators ~~with~~ switching to trivalent chromium baths exclusively using a ~~certified~~ chemical fume suppressant containing a wetting agent to comply with subparagraph ~~(c)(14)(A)~~(h)(3)(A) are not subject to paragraphs (p)(1) through (p)(3)~~ of this subdivision~~, but shall instead submit ~~the following~~ a report~~s~~ within 30 days of a change to the trivalent chromium electroplating process that includes:

~~(A) Sources Currently Using Trivalent Chromium~~

~~No later than November 24, 2007, the owner or operator of an existing facility shall submit a notification of compliance status that contains the information specified in (k)(5)(A)(i) through (iii). New and modified facilities shall submit this information within 30 days after the effective date of this rule.~~

~~(i) The name and address of each source subject to this paragraph;~~

~~(ii) A statement that a trivalent chromium process that incorporates a wetting agent will be used to comply; and~~

~~(iii) The list of bath components that comprise the trivalent chromium bath, with the wetting agent clearly identified.~~

~~(B) Sources Changing to Trivalent Chromium~~

~~Within 30 days of a change to the trivalent chromium electroplating process, a report that includes:~~

(A) ~~(i)~~ A description of the manner in which the process has been changed and the emission limitation, if any, now applicable to the source; and

(B) ~~(ii)~~ The notification and reporting requirements of paragraphs (p)(1), (p)(2), and (p)(3)~~ of this subdivision~~, if the ~~source complies~~facility complies with the emission limitation option, or paragraph (p)(5)~~ of this subdivision~~, if the source uses a wetting agent to comply. The report shall be submitted in accordance with the schedules identified in those paragraphs.

(p) (6) Adjustments to the Timeline for Submittal and Format of Reports

The Executive Officer may adjust the timeline for submittal of periodic reports, allow consolidation of multiple reports into a single report, establish a common schedule for submittal of reports, or accept reports prepared to comply with other state or local requirements. Adjustments shall provide the same information and shall not alter the overall frequency of reporting.

~~(l) New and Modified Sources~~

~~(1) Notification of Construction~~

~~After the effective date of this rule no person may construct or modify a source, such that it becomes a source subject to this section, without submitting a notification of construction or modification to the Executive Officer and receiving approval in advance to construct or modify the source. The contents of the Notification of Construction shall include information as listed in Appendix 4.~~

~~(2) New Source Review Rules~~

~~In lieu of complying with the requirements in paragraph (l)(1) of this subdivision, a facility may fulfill these requirements by complying with the District's new source review rule or policy, provided similar information is obtained.~~

(~~m~~q) Procedure for Establishing Alternative Requirements

(q) (1) Request Approval of an Alternative Requirement

Any person may request approval of an alternative requirement. The person seeking such approval shall submit the proposed alternative requirement to the Executive Officer for approval. The request shall include the proposed alternative requirement, the reason for requesting the alternative requirement, and information demonstrating that the criteria for approval identified in Appendix 6 is met.

(q) (2) Approval of an Alternative Requirement

The Executive Officer may approve an alternative requirement if it determines that application of the alternative requirement meets the criteria for approval identified in Appendix 6 and the Executive Officer has submitted the proposed alternative requirements and has received concurrence from the applicable concurring agencies identified in Appendix 6.

(q) (3) Approval Criteria

Nothing in this subdivision prohibits the Executive Officer from establishing approval criteria more stringent than that required in Appendix 6.

(q) (4) Alternatives Already Approved by U.S. EPA

Waivers for alternatives already approved by the U.S. EPA prior to October 24, 2007 shall remain in effect until the effective dates of the specified requirements become effective.

(~~n~~r) Exemptions

~~(1) This rule shall not apply to process tanks associated with a chromium electroplating or chromic acid anodizing process in which neither chromium electroplating nor chromic acid anodizing is taking place. Examples of such tanks include, but are not limited to, rinse tanks, etching tanks, and cleaning tanks. Tanks that contain a chromium solution in which no electrolytic process occurs, are not subject to this rule. An example of such a tank is a chromium conversion coating tank where no electrical current is applied.~~

(r) ~~(2)~~(1) The requirements of subdivisions ~~(g), (h), and (i)~~(m) and (n) do not apply to decorative chromium electroplating tanks using a trivalent chromium bath with a wetting agent.

~~(3)~~ ~~The requirements of paragraphs (c)(8) through (c)(14), (d)(5) and (d)(6), and subdivision (i) do not apply during periods of equipment breakdown, provided the provisions of District Rule 430 are met, notwithstanding subparagraph (b)(3)(B) of Rule 430.~~

(r) (2) The requirements of paragraphs (f)(6), (g)(4), and (g)(5) do not apply to buffing, grinding, or polishing operations conducted under a continuous flood of metal removal fluid.

~~(o)~~ ~~Title V Permit Requirements~~

~~The owner or operator of a major source facility subject to the requirements of this section is required to obtain a Title V permit from the District in accordance with the procedures set forth in District Regulation XXX.~~

(~~p~~s) Rule 1402 Inventory Requirements

The owner or operator of ~~chromium electroplating or chromic acid anodizing tanks at~~ a facility that is in compliance with this rule will not be required to submit an emission inventory to the Executive Officer for emissions of toxic compounds subject to this rule, pursuant to ~~subparagraph (n)(1)(B)~~paragraph (p)(1) of Rule 1402 - Control of Toxic Air Contaminants from Existing Sources.

~~(q)~~ ~~Chromium Electroplating or Chromic Acid Anodizing Kits Requirements~~

~~(1)~~ ~~Except as provided in paragraph (q)(2), no person shall sell, supply, offer for sale, or manufacture for sale in the District, any chromium electroplating or chromic acid anodizing kit.~~

~~(2)~~ ~~The provisions of paragraph (q)(1) do not apply to any person that sells, supplies, offers for sale, or manufactures for sale in the District a chromium electroplating or chromic acid anodizing kit to the owner or operator of a permitted facility at which chromium electroplating or chromic acid anodizing is performed.~~

~~(3)~~ ~~No person shall use a chromium electroplating or chromic acid anodizing kit to perform chromium electroplating or chromic acid anodizing unless these activities are performed at a permitted facility that complies with the requirements of this rule.~~

~~(4)~~ ~~For the purposes of this section, "chromium electroplating or chromic acid anodizing kit" means chemicals and associated equipment for conducting chromium electroplating or chromic acid anodizing including, but not limited to, internal and external tank components.~~

(t) Conditional Requirements for Permanent Total Enclosure

(t) (1) The owner or operator of a facility shall install a Permanent Total Enclosure that does not exceed 3.5% for all enclosure openings, as specified in paragraph (e)(1) for a Tier III hexavalent chromium tank:

(A) That results in more than one non-passing source test as required in paragraph (k)(1) occuring within a consecutive 48-month period; or

(B) That is not immediately shut down pursuant to clause (m)(1)(C)(iii), subparagraph (m)(1)(D) or subparagraph (m)(1)(F):

(i) More than once within a consecutive 48-month period for a facility that is located more than 1,000 feet from a sensitive receptor; or

(ii) Once for a facility that is located less than or equal to 1,000 feet from a sensitive receptor.

(t) (2) Within 30 days of the date of notification by the Executive Officer that a Permanent Total Enclosure is required, the owner or operator of facility may submit a written report to the Executive Officer providing evidence that the installation of a Permanent Total Enclosure is not warranted based on the following criteria:

(A) The incidents of non-compliance specified in paragraph (t)(1) did not occur; or

(B) The owner or operator of a facility resolved the incidents of non-compliance specified in paragraph (t)(1) in a timely manner; and

(C) The owner or operator of a facility implemented specific measures to minimize hexavalent chromium emissions.

(t) (3) The Executive Officer shall use the information provided by the owner or operator of a facility to determine if a permanent total enclosure is required and will notify the owner or operator of a facility within 90 days of receiving the written report.

(t) (4) The owner or operator of a facility required to install a permanent total enclosure pursuant to subdivision (t) shall vent the permanent total enclosure to an add-on air pollution control device that is fitted with HEPA filters, or other filter media that is rated by the manufacturer to be equally or more effective; and designed in a manner that does not conflict with requirements or guidelines set forth by OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety.

(t) (5) The owner or operator of a facility required to install a permanent total enclosure pursuant to subdivision (t) shall install the permanent total enclosure no later than 12 months after the SCAQMD Permit to Construct is issued by the Executive Officer. The owner or operator of a facility shall submit complete SCAQMD permit applications for the permanent total enclosure to the Executive Officer no later than:

(A) 180 days after notification by the Executive Officer if the property line of the facility is within 500 feet of the property line of any sensitive receptor.

(B) 270 days after notification by the Executive Officer for all other facilities.

(u) Hexavalent Chromium Phase-Out Plan

(u) (1) The owner or operator of a facility shall not be subject to the requirements of paragraph (h)(4) to vent a Tier III Hexavalent Chromium Tank, existing on or before [Date of Rule Adoption], to an add-on air pollution control device, if the owner or operator of a facility submits a Hexavalent Chromium Phase-Out Plan to the Executive Officer for review and approval no later than [90 Days after Date of Rule Adoption] containing the following:

(A) A commitment that the facility will permanently eliminate or reduce hexavalent chromium concentrations within the subject tank to below the concentration of the definition of a Tier II or Tier III Hexavalent Chromium Tank;

(B) A description of the method by which hexavalent chromium concentrations will be permanently eliminated or reduced from the subject tank(s) and the date of final completion, not to exceed two years from approval of the Hexavalent Chromium Phase-Out Plan;

(C) A list of milestones, including any testing required to meet specifications or quality assurance requirements, to allow the facility to reduce or eliminate hexavalent chromium by the completion date;

(D) Completion date for each of the milestones listed in subparagraph (u)(1)(C); and

(E) A list of all control measures that will be implemented for the subject tank(s), including dates of implementation, until the hexavalent chromium-concentration is eliminated or reduced as stated.

(u) (2) The Hexavalent Chromium Phase-Out Plan shall be subject to the fees specified in Rule 306.

(u) (3) The Executive Officer shall notify the owner or operator of a facility in writing whether the Hexavalent Chromium Phase-Out Plan is approved or disapproved. Determination of approval status shall be based on, at a minimum, submittal of information that satisfies the criteria set forth in paragraph (u)(1). If the Hexavalent Chromium Phase-Out Plan is disapproved, the owner or operator of a facility shall resubmit the plan, subject to plan fees specified in Rule 306, within 30 calendar days after notification of disapproval of the Hexavalent Chromium Phase-Out Plan. The resubmitted Hexavalent Chromium Phase-Out Plan shall include any information necessary to address deficiencies identified in the disapproval letter.

(u) (4) Upon approval of the Hexavalent Chromium Phase-Out Plan, the owner or operator of a facility shall implement the approved plan and shall submit a progress report to the Executive Officer by the first day of every calendar quarter indicating the increments of progress for the previous quarter, or submit according to an alternative schedule as specified in the approved plan.

(u) (5) The Executive Officer shall notify the owner or operator of a facility to submit complete SCAQMD permit applications for an add-on air pollution control device to comply with subdivision (h) if:

(A) The owner or operator does not eliminate or reduce hexavalent chromium by the final completion date in the approved Hexavalent Chromium Phase-Out Plan;

(B) The Executive Officer denies a resubmitted Hexavalent Chromium Phase-Out Plan; or

(C) The owner or operator fails to resubmit a Hexavalent Chromium Phase-Out Plan as required under paragraph (u)(3).

(u) (6) The owner or operator shall install the add-on air pollution control device specified in the permit application submitted pursuant to paragraph (u)(5) no later than 180 days after a SCAQMD Permit to Construct has been issued.

(v) Time Extensions

(v) (1) An owner or operator of a facility may submit a request to the Executive Officer for a one-time extension for up to 12 months to:

(A) Complete installation of an add-on air pollution control device, implement an approved alternative compliance method, or implement an approved Hexavalent Chromium Phase-Out Plan to meet the requirements under subparagraph (h)(4)(C); or

(B) Meet the hexavalent chromium emission limit, phase-out the use of hexavalent chromium, or implement an alternative to a wetting agent chemical fume suppressant required under paragraph (l)(5);

(v) (2) An owner or operator of a facility that elects to submit a request for a time extension shall submit the request no later than 90 days before the compliance deadline specified in subparagraph (h)(4)(C) or paragraph (l)(5) and provide:

(A) The facility name, SCAQMD facility identification number, and the name and phone number of a contact person;

(B) A description of the chromium electroplating or chromic acid anodizing tank and the SCAQMD Permit to Operate and tank number;

(C) A description of the emission reduction approach that is being implemented;

(D) The specific provision under subparagraph (h)(4)(C) or paragraph (l)(5) for which a compliance extension is being requested;

(E) The reason(s) a time extension is needed;

(F) Progress in meeting the provisions in subparagraph (h)(4)(C) or paragraph (l)(5) including but not limited to date permit application was submitted to the SCAQMD, date permit to construct was approved, purchase order of equipment, date of service of contractors or consultants to install equipment; and

(G) Length of time requested, up to 12 months.

(v) (3) Approval of Time Extensions

The Executive Officer will review the request for the time extension and will approve the time extension if the owner or operator:

(A) Demonstrates that there are specific circumstances beyond the control of the owner or operator that necessitate additional time to meet the compliance dates specified under subparagraph (h)(4)(C) and paragraph (l)(5); and

(B) The demonstration is substantiated with information that includes, but is not limited to detailed schedules, engineering designs, construction plans, permit applications, purchase orders, economic burden, and technical infeasibility.

Appendix 1 – Content of ~~Performance~~ Source Test Reports.

~~Performance~~ Source test reports shall contain, at a minimum, the following information:

1. A brief process description;
2. Sampling location description(s);
3. A description of sampling and analytical procedures and any modifications to standard procedures;
4. Test results in milligrams/ampere-hour;
5. Quality assurance procedures and results;
6. Records of operating conditions during the test, preparation of standards, and calibration procedures;
7. Original data for field sampling and field and laboratory analyses;
8. Documentation of calculations; ~~and~~
9. Applicable Industrial Ventilation Limits;
10. Collection slot velocities (if applicable);
11. Measured static, differential, or volumetric flow rate at the push manifold, collection manifold, across each stage of the control device, and exhaust stack (if applicable); and

~~9~~12. Any other information required by the test method.

~~Note: Test reports consistent with the provisions of ARB Method 425 will fulfill the above performance test report content requirement.~~

Appendix 2 – Content of Initial Compliance Status Reports.

Initial compliance status reports shall contain, at a minimum, the following information:

1. Facility name, SCAQMD ID number, facility address, owner~~/~~ and operator name, and telephone number;
2. The distance of the facility to the property line of the nearest commercial/industrial building and sensitive receptor using measurement methods provided in ~~subparagraph (c)(11)(B)~~paragraph (h)(2);
3. Sensitive receptor locations, if they are located within one-quarter of a mile from the center of the facility;
4. Building parameters
   - Stack height in feet (point sources); or
   - Building area in square feet (volume sources).
5. Maximum potential rectifier capacity per tank and facility maximum operating schedule (more than or less than or equal to 12 hours per day);
6. The applicable emission limitation and the methods that were used to determine compliance with this limitation;
7. Facility-wide emissions~~ established under paragraph (d)(4)~~, if applicable;
8. If a~~ performance~~ source test is required, the test report documenting the results of the ~~performance~~source test, which contains the elements listed in Appendix 1;
9. If an initial smoke test demonstrating the capture efficiency of ~~a ventilation system~~ the add-on air pollution control device or add-on non-ventilated air pollution control device is required, the test report documenting the results which contain the elements listed in Appendix 8~~9~~;
10. The type and quantity, in pounds, of hazardous air pollutants emitted by the source.~~ (If the owner or operator is subject to the construction and modification provisions of subdivision (l) and had previously submitted emission estimates, the owner or operator shall state that this report corrects or verifies the previous estimate.)~~;
11. For each monitored parameter for which a compliant value is to be established under subdivision (m)~~(g)~~, the specific operating parameter value, or range of values, that corresponds to compliance with the applicable emission limit;

12. The methods that will be used to determine continuous compliance, including a description of monitoring and reporting requirements, if methods differ from those identified in this section;
13. A description of the air pollution control technique for each emission point;
14. A statement that the owner or operator of a facility has completed and has on file the operation and maintenance plan as required by subdivision (n)~~(i)~~;
15. The actual cumulative ampere-hour usage expended during the preceding calendar year, if operation occurred;
16. Information on calculations for the building enclosure envelope pursuant to paragraph (e)(1), including locations and dimensions of openings that are counted towards the applicable building envelope allowance;

1~~6~~7. A statement that the owner or operator of a facility, or personnel designated by the owner or operator of a facility, has completed a ~~District~~SCAQMD-approved training program pursuant to ~~paragraph (c)(7)~~subdivision (j); and

1~~7~~8. A statement by the owner or operator of a facility as to whether the source has complied with the provisions of this section.

Appendix 3 – Content of Ongoing Compliance Status and Emission Reports.

Ongoing compliance status and emission reports shall, at a minimum, contain the following information:

1. The company name and address of the source;
2. An identification of the operating parameter that is monitored for compliance determination, as required by subdivision (m)~~(g)~~;
3. The relevant emission limitation for the source, and the operating parameter value, or range of values, that correspond to compliance with this emission limitation as specified in the notification of initial compliance status required by Appendix 2;
4. The beginning and ending dates of the calendar year for the reporting period;
5. A description of the type of process performed in the source;
6. The actual cumulative rectifier usage expended during the calendar year of the reporting period, on a month-by-month basis, if the source is a hard or decorative chromium electroplating tank or chromic acid anodizing tank;
7. Updated facility-wide emissions~~ established under paragraph (d)(4)~~, if applicable;
8. Hexavalent chromium and trivalent chromium emissions data in grams per year for the reporting period;
9. Sensitive receptor distances, if they are located within ¼ of mile from the center of the facility and facility maximum operating schedule (more than or less than or equal to 12 hours per day), if changed since submittal of the initial compliance status report or subsequent ongoing compliance status and emission reports. Sensitive receptor distances shall be measured using methods provided in paragraph (h)(2) ~~(c)(11)(B)~~;
10. A summary of any excess emissions or exceeded monitoring parameters as identified in the records required by paragraph (~~j~~o)(~~6~~7);
11. A certification by a responsible official that the inspection and maintenance requirements in subdivision (n~~h~~) were followed in accordance with the operation and maintenance plan for the source;
12. If the operation and maintenance plan required by subdivision (n~~i~~) was not followed, an explanation of the reasons for not following the provisions, an assessment of whether any excess emissions and/or monitoring parameter excesses are believed to have occurred, and a copy of the record(s) required by paragraph (o~~j~~)(1) documenting that the operation and maintenance plan was not followed;

13. If applicable, results of periodic smoke tests demonstrating capture efficiency of ~~ventilation system(s)~~an add-on air pollution control device or add-on non-ventilated air pollution control device conducted during the reporting period;
14. A description of any changes in monitoring, processes, or controls since the last reporting period;
15. A statement that the owner or operator of a facility, or personnel designated by the owner or operator of a facility has, within the last 2 years, completed a ~~District~~SCAQMD-approved training program pursuant to ~~paragraph (c)(7)~~subdivision (j);
16. Add-on air pollution ventilation measurements conducted during the most recent successful SCAQMD approved source test that include:
    (A) The velocity of each collection slot, including the velocity values that would be 95% and 90% of the source-tested value.
    (B) For push-pull systems, the pressure of each push air manifold, including the pressure values that would be 110%, 105%, 95%, and 90% of the source-tested value;
17. A summary of any pollution prevention measures that the facility has implemented that eliminates or reduces the use of hexavalent chromium in the chromium electroplating or chromic acid anodizing process and associated process tanks.
18. ~~Updated i~~Information on calculations for the building enclosure envelope pursuant to paragraph (e)(1), including locations and dimensions of openings that are counted towards the applicable building envelope allowance.

1~~6~~9. The name, title, and signature of the responsible official who is certifying the accuracy of the report; and

~~17~~20. The date of the report.

~~Appendix 4 – Notification of Construction Reports.~~

~~Notification of Construction reports shall contain the following information:~~

~~(A) The owner or operator's name, title, and address;~~

~~(B) The address (i.e., physical location) or proposed address of the source if different from the owner's or operator's;~~

~~(C) A notification of intention to construct a new source or make any physical or operational changes to a source that may meet or has been determined to meet the criteria for a modification;~~

~~(D) The expected commencement and completion dates of the construction or modification;~~

~~(E) The anticipated date of (initial) startup of the source;~~

~~(F) The type of process operation to be performed (hard or decorative chromium electroplating, or chromic acid anodizing);~~

~~(G) A description of the air pollution control technique to be used to control emissions, such as preliminary design drawings and design capacity if an add-on air pollution control device is used; and~~

~~(H) An estimate of emissions from the source based on engineering calculations and vendor information on control device efficiency, expressed in units consistent with the emission limits of this subpart. Calculations of emission estimates should be in sufficient detail to permit assessment of the validity of the calculations.~~

~~Note: A facility can fulfill these report content requirements by complying with the District's new source review rule or policy, provided similar information is obtained.~~

Appendix 4 – Summary of Inspection and Maintenance Requirements

Table 4-1: Summary of Inspection and Maintenance Requirements for Sources Using Add-on Air Pollution Control Device(s) or Add-On Non-Ventilated Air Pollution Control Device(s)

Control Technique/Equipment	Inspection and Maintenance Requirements	Frequency
Composite mesh-pad (CMP) system.	1. Visually inspect device to ensure that there is proper drainage, no unusual chromic acid buildup on the pads, and no evidence of chemical attack that affects the structural integrity of the device.	1. Once per quarter.
	2. Visually inspect back portion of the mesh pad closest to the fan to ensure there is no breakthrough of chromic acid mist.	2. Once per quarter.
	3. Visually inspect ductwork from tank to the control device to ensure there are no leaks. 4. Perform washdown of the composite mesh-pads in accordance with manufacturer's recommendations.	3. Once per quarter. 4. Per manufacturer.
Packed-bed scrubber (PBS)	1. Visually inspect device to ensure there is proper drainage, no unusual chromic acid buildup on the packed-beds, and no evidence of chemical attack that affects the structural integrity of the device. 2. Visually inspect back portion of the chevron blade mist eliminator to ensure that it is dry and there is no breakthrough of chromic acid mist. 3. Same as number 3 above for CMP system. 4. Add fresh makeup water to the packed-bed[A].	1. Once per quarter. 2. Once per quarter. 3. Once per quarter. 4. Whenever makeup is added.

[A] Horizontal packed-bed scrubbers without continuous recirculation must add make-up water to the top of the packed-bed.

Table 4-1:
Summary of Inspection and Maintenance Requirements for Sources Using Add-on Air Pollution Control Device(s) or Add-On Non-Ventilated Air Pollution Control Device(s) (cont)

Control Technique/Equipment	Inspection and Maintenance Requirements	Frequency
PBS/CMP system	1. Same as for CMP system. 2. Same as for CMP system.	1. Once per quarter. 2. Once per quarter.
	3. Same as for CMP system. 4. Same as for CMP system	3. Once per quarter. 4. Per manufacturer.
Fiber-bed mist eliminator[B]	1. Visually inspect fiber-bed unit and prefiltering device to ensure there is proper drainage, no unusual chromic acid buildup in the units, and no evidence of chemical attack that affects the structural integrity of the devices. 2. Visually inspect ductwork from tank or tanks to the control device to ensure there are no leaks. 3. Perform washdown of fiber elements in accordance with manufacturer's recommendations.	1. Once per quarter. 2. Once per quarter. 3. Per manufacturer.
High Efficiency Particulate Arrestors filter (HEPA)	1. Look for changes in the pressure drop. 2. Replace HEPA filter.	1. Once per week. 2. Per manu-facturer's specifications or SCAQMD's requirement.

[B] Inspection and maintenance requirements for the control device installed upstream of the fiber-bed mist eliminator to prevent plugging do not apply as long as the inspection and maintenance requirements for the fiber-bed unit are followed.

Table 4-1:
Summary of Inspection and Maintenance Requirements for Sources Using Add-on Air Pollution Control Device(s) or Add-On Non-Ventilated Air Pollution Control Device(s) (cont)

Control Technique/Equipment	Inspection and Maintenance Requirements	Frequency
Chromium Tank Covers	1. Drain the air-inlet (purge air) valves at the end of each day that the tank is in operation. 2. Visually inspect access door seals and membranes for integrity. 3. Drain the evacuation unit directly into the electroplating tank or into the rinse tanks (for recycle into the electroplating tank). 4. Visually inspect membranes for perforations using a light source that adequately illuminates the membrane (e.g., Grainger model No. 6X971 Fluorescent Hand Lamp). 5. Visually inspect all clamps for proper operation; replace as needed. 6. Clean or replace filters on evacuation unit. 7. Visually inspect piping to, piping from, and body of evacuation unit to ensure there are no leaks and no evidence of chemical attack. 8. Replace access door seals, membrane evacuation unit filter, and purge air inlet check valves in accordance with the manufacturer's recommendations.	1. Once per day. 2. Once per week. 3. Once per week. 4. Once per month. 5. Once per month. 6. Once per month. 7. Once per quarter. 8. Per manufacturer.
Pitot tube	Backflush with water, or remove from the duct and rinse with fresh water. Replace in the duct and rotate 180 degrees to ensure that the same zero reading is obtained. Check Pitot tube ends for damage. Replace Pitot tube if cracked or fatigued.	Once per quarter.
Ampere-hour meter	Install and maintain per manufacturer's specifications.	Per manufacturer.

**Table 4-2:
Additional Inspection and Maintenance Requirements for Tier I, II, and III Hexavalent Chromium Tank(s)**

Control Technique/Equipment	**Inspection and Maintenance Requirements**	**Frequency**
Temperature Gauge	1. Install and maintain per manufacturer's specification at each Tier I, II, and III Hexavalent Chromium Tank.	1. Per manufacturer.
	2. Calibrated or confirmed to be accurate.	2. Once per year.
Collection Slots and Push Air Manifolds for Push-Pull Systems	1. Visually inspect slots and push air manifolds to ensure that there are no obstructions or clogs.	1. Once per week.
	2. Clean slots or push air manifolds.	2. Once every 180 days.
	3. Measure slot velocity of each slot and pressure at each push air manifold using a hot-wire anemometer, vein anemometer, or approved device	3. Once every 180 days.
Air Flow Gauges	Install and maintain per manufacturer's specifications.	Per manufacturer

Table 4-3
Summary of Inspection and Maintenance Requirements for Sources Not Using Add-on Air Pollution Control Devices to Control Tier II Hexavalent Chromium Tank(s)

Equipment	Inspection and Maintenance Requirement for Monitoring Equipment	Frequency
Temperature Data Logger	1. Install and maintain per manufacturer's specification at each Tier II Hexavalent Chromium Tank.	1. Per manufacturer.
	2. Calibrate or confirm to be accurate.	2. Per manufacturer.

Table 4-4
Summary of Inspection and Maintenance Requirements for Sources Using Chemical or Mechanical Fume Suppressants

Equipment	Inspection and Maintenance Requirement for Monitoring Equipment	Frequency
Ampere-hour meter	Install and maintain per manufacturer's specifications.	Per manufacturer.
Stalagmometer/ Tensiometer	Calibrate and maintain per manufacturer's specifications.	Per manufacturer.

Appendix 5 – Smoke Test for ~~Chromium Tank Covers.~~Add-on Non-Ventilated Air Pollution Control Device

SMOKE TEST TO VERIFY THE SEAL INTEGRITY OF COVERS DESIGNED TO REDUCE CHROMIUM EMISSIONS FROM ~~ELECTROPLATING AND ANODIZING~~ TIER III HEXAVALENT CHROMIUM TANKS

1. Applicability and Principle

1.1 Applicability. This ~~alternative~~ method is applicable to all ~~hard chromium electroplating and anodizing operations~~ Tier III Hexavalent Chromium Tanks where a chromium tank cover or add-on non-ventilated air pollution control device is used on the tank for reducing chromium emissions.

1.2 Principle. During ~~chromium electroplating or anodizing~~electrolytic operations, gas bubbles ~~of hydrogen and oxygen gas~~ generated during the process rise to the surface of the tank liquid and burst. Non-electrolytic tanks that are either heated or air sparged generate bubbles that rise to the surface. Upon bursting, tiny droplets of chromic acid (chromium mist) or hexavalent chromium laden liquid become entrained in the air above the tank. Because the chromium tank cover completely encloses the air above the tank, the chromium mist either falls back into the solution because of gravity or collects on the inside walls of the chromium tank cover and runs back into the solution. A semi-permeable membrane allows passage of the hydrogen and oxygen out of the chromium tank cover. A ~~lit~~ smoke device is placed inside the chromium tank cover to detect leaks at the membrane, joints, or seals.

2. Apparatus

2.1 Smoke device. Adequate to generate 500 to 1000 ft^3 of smoke/20 ft^2 of tank surface area ~~(e.g., Model #1A−15 SECONDS from Superior Signal, New York)~~.

2.2 Small container. To hold the smoke device.

3. Procedure

Place the small container on a stable and flat area at center of the chromium tank cover (you can use a board and place it on the buss bars). Place the smoke device inside the container. After ~~lighting~~ activating the smoke device, quickly close the access door to avoid smoke from escaping. Let smoke device ~~completely burn;~~fill the entire space under the chromium tank cover ~~will now be filled~~ with ~~the~~ smoke. ~~Observe for~~ An acceptable smoke test shall demonstrate no leaks of smoke from each seal, joint, and membrane of the chromium tank cover. Record these observations including the locations and a qualitative assessment of any leaks of smoke.

When all seals, joints, and membranes have been observed, evacuate the unit to remove the smoke from the chromium tank cover.

Appendix 6 – Approval of Alternatives for Specific Requirements

Section	Requirement	Description of Authority	Approving Agency	Concurring Agency
(~~a~~b)	Applicability	Assisting an owner or operator of a facility in determining whether a facility is subject to the ~~ATCM~~rule	~~District~~ SCAQMD	
~~(c)~~(h)	Standards	Approving alternative standards	~~District~~ SCAQMD	U.S. EPA
~~(e)(1)~~(k)(1)	~~Performance~~ Source Test Requirement	Waiving a ~~performance~~ source test requirement	~~District~~ SCAQMD	
~~(e)(2)~~(k)(1)	Use of Existing ~~Performance~~Source Tests	Approving the use of existing performance test results to demonstrate compliance, based on the "Description of the Technical Review Protocol for Performance Tests of California Chrome Plating Sources" (see Attachment 2 of the July 10, 1998 memorandum from John S. Seitz entitled, "Delegation of 40 CFR Part 63 General Provisions Authorities to State and Local Air Pollution Control Agencies.")	~~District~~ SCAQMD	
~~(e)(3)~~(k)(2)	Test Method	Approving site-specific alternatives to test methods	~~District~~ SCAQMD for minor[1] or intemediate[2] changes	U.S. EPA for major[3] changes, and ARB
~~(e)(4)~~(k)(4)	Pre-Test Protocol	Approving pre-test protocols	~~District~~ SCAQMD	
~~(e)(5)~~(k)(5)	Test All Emission Points	Waiving the requirement to test all emission points	~~District~~ SCAQMD	
~~(g)~~(m)	Parameter Monitoring	Approving site-specific changes in monitoring methodology	~~District~~ SCAQMD for minor[1] or intermediate[4] changes	U.S. EPA for major[3] changes
~~(h)~~(n)	Inspection and Maintenance Requirements	Approving site-specific changes to inspection and maintenance requirements	~~District~~ SCAQMD	

Section	Requirement	Description of Authority	Approving Agency	Concurring Agency
~~(i)~~(n)	Operation and Maintenance Plans	Approving or requiring site-specific changes to operation and maintenance plans	~~District~~ SCAQMD	
~~(j)(1)-(10)~~(o)(1) - (o)(11)	Recordkeeping	Waiving or altering recordkeeping requirements	~~District~~ SCAQMD	U.S. EPA for major[3] changes
~~(j)(12)~~(o)(12)	Retention of Records	Waiving or altering the requirement to retain records for 5 years	~~District~~ SCAQMD	U.S. EPA for major[3] changes
~~(k)~~(p)	Reporting	Waiving or altering reporting requirements	~~District~~ SCAQMD	U.S. EPA[5] for major[3] changes

1 Minor change to a test method or monitoring is a modification to a federally enforceable test method or monitoring that (a) does not decrease the stringency of the emission limitation or standard or the compliance and enforcement measures for the relevant standard; (b) has no national significance (e.g., does not affect implementation of the ~~application~~ applicable regulation for other affected sources, does not set a national precedent, and individually does not result in a revision to the test method or monitoring requirement); and (c) is site specific, made to reflect or accommodate the operation characteristics, physical constraints, or safety concerns of an affected source.

2 Intermediate change to a test method is a within-method modification to a federally enforceable test method involving "proven technology" (generally accepted by the scientific community as equivalent or better) that is applied on a site-specific basis and that may have the potential to decrease the stringency of the associated emission limitation or standard. Intermediate changes are not approvable if they decrease the stringency of the standard.

3 Major change to a test method or monitoring is a modification to a federally enforceable test method or federally required monitoring that uses unproven technology or procedures or is an entirely new method (sometimes necessary when the required test method is unsuitable).

4 Intermediate change to monitoring is a modification to federally required monitoring involving "proven technology" (generally accepted by the scientific community as equivalent or better) that is applied on a site-specific basis and that may have the potential to decrease the stringency of the compliance and enforcement measures for the relevant standard.

5 U.S. EPA concurrence is not needed for adjustments made according to paragraph (~~k~~p)(6).

~~Appendix 7 – Distance-Adjusted Ampere-Hour and Annual Emissions Limits For Facilities Located More Than 25 Meters from a Residence or Sensitive Receptor.~~

~~Facilities subject to the interim requirements of paragraph (c)(9) or complying with the interim facility-wide mass emission rate in paragraph (d)(4) may adjust the ampere-hour or annual emission limits according to actual receptor distance. Ampere-hour limits refer to actual consumption of electrical current from all hexavalent chromium electroplating and chromic acid anodizing operations at a facility.~~

~~Use the following tables to determine the appropriate ampere-hours or annual emissions for compliance with the interim emission limitations in paragraph (c)(9), or compliance with the interim facility-wide mass emission rate in paragraph (d)(4) according to the distance to the nearest receptor. Receptor distance is measured as follows:~~

~~Table 7-1~~
~~Measuring Receptor Distance~~

~~Source Type~~	~~Measure From:~~	~~Measure To:~~
~~Point Source, Single Stack~~	~~Stack~~	~~Property Line of Nearest Receptor~~
~~Point Source, Multiple Stacks~~	~~Centroid of Stacks~~	~~Property Line of Nearest Receptor~~
~~Volume Source No Stack~~	~~Center of Building~~	~~Property Line of Nearest Receptor~~

~~Table 7-2~~

~~Hexavalent Chromium Electroplating and Chromic Acid Anodizing Operation Vented to Air Pollution Control Device(s) Normally Operating 12 Hours Per Day or Less~~

~~Distance to Nearest Receptor (m)~~	~~25~~	~~30~~	~~35~~	~~40~~	~~45~~	~~50~~	~~55~~	~~60~~
~~Ampere-Hours/yr (x10^6)~~	~~1.60~~	~~1.74~~	~~1.88~~	~~2.03~~	~~2.22~~	~~2.44~~	~~2.69~~	~~2.98~~
~~Annual Emissions (lbs/yr)~~	~~0.036~~	~~0.039~~	~~0.042~~	~~0.045~~	~~0.049~~	~~0.054~~	~~0.060~~	~~0.066~~
~~Distance to Nearest Receptor (m)~~	~~65~~	~~70~~	~~75~~	~~80~~	~~85~~	~~90~~	~~95~~	~~100~~
~~Ampere-Hours/yr (x10^6)~~	~~3.36~~	~~3.84~~	~~4.48~~	~~4.87~~	~~5.33~~	~~5.88~~	~~6.56~~	~~7.42~~
~~Annual Emissions (lbs/yr)~~	~~0.074~~	~~0.085~~	~~0.099~~	~~0.108~~	~~0.118~~	~~0.130~~	~~0.145~~	~~0.164~~

~~Table 7-3~~

~~Any Hexavalent Chromium Electroplating and Chromic Acid Anodizing Operation Vented to Air Pollution Control Device(s) Normally Operating More Than 12 Hours Per Day~~

~~Distance to Nearest Receptor (m)~~	~~25~~	~~30~~	~~35~~	~~40~~	~~45~~	~~50~~	~~55~~	~~60~~
~~Ampere-Hours/yr (x10^6)~~	~~1.80~~	~~1.80~~	~~1.80~~	~~1.80~~	~~1.80~~	~~1.80~~	~~1.92~~	~~2.05~~
~~Annual Emissions (lbs/yr)~~	~~0.039~~	~~0.039~~	~~0.039~~	~~0.039~~	~~0.039~~	~~0.039~~	~~0.042~~	~~0.044~~
~~Distance to Nearest Receptor (m)~~	~~65~~	~~70~~	~~75~~	~~80~~	~~85~~	~~90~~	~~95~~	~~100~~
~~Ampere-Hours/yr (x10^6)~~	~~2.20~~	~~2.38~~	~~2.58~~	~~2.74~~	~~2.92~~	~~3.12~~	~~3.35~~	~~3.62~~
~~Annual Emissions (lbs/yr)~~	~~0.048~~	~~0.051~~	~~0.056~~	~~0.059~~	~~0.063~~	~~0.068~~	~~0.073~~	~~0.078~~

~~Table 7-4~~

~~Decorative Chromium Electroplating and Chromic Acid Anodizing Operations Without Air Pollution Control~~

~~Distance to Nearest Receptor (m)~~	~~25~~	~~30~~	~~35~~	~~40~~	~~45~~	~~50~~	~~55~~	~~60~~
~~Ampere-Hours/yr (x10^6)~~	~~1.15~~	~~1.31~~	~~1.52~~	~~1.80~~	~~2.22~~	~~2.89~~	~~3.19~~	~~3.56~~
~~Annual Emissions (lbs/yr)~~	~~0.025~~	~~0.028~~	~~0.033~~	~~0.039~~	~~0.048~~	~~0.063~~	~~0.069~~	~~0.077~~
~~Distance to Nearest Receptor (m)~~	~~65~~	~~70~~	~~75~~	~~80~~	~~85~~	~~90~~	~~95~~	~~100~~
~~Ampere-Hours/yr (x10^6)~~	~~4.03~~	~~4.64~~	~~5.47~~	~~5.92~~	~~6.46~~	~~7.10~~	~~7.88~~	~~8.87~~
~~Annual Emissions (lbs/yr)~~	~~0.088~~	~~0.101~~	~~0.119~~	~~0.129~~	~~0.140~~	~~0.154~~	~~0.171~~	~~0.193~~

Appendix 7~~8~~ – Information Demonstrating an Alternative Method(s) of Compliance Pursuant to ~~Paragraph (d)(6).~~Subdivision (i)

The owner or operator of a facility applying for approval of an alternative method of compliance must submit to the ~~District~~ Executive Officer the following information.

1. A ~~performance~~ source test as specified in subdivision (~~e~~i) that is submitted after receipt of the SCAQMD Permit to Construct. The test shall have been conducted in a manner consistent with normal electroplating or anodizing operations.
2. A demonstration that the alternative method achieves an equal or greater amount of reductions in hexavalent chromium emissions than would be achieved with direct compliance with the applicable emission rate in paragraphs ~~(c)(11)(A), (c)(12)(A)(ii), or (c)(13)(A)(iv)~~(h)(2) or (h)(4).
3. Calculations based on scientifically valid risk assessment methodologies demonstrating that the alternative method results in reducing risk equally or greater than the risk reduction that would be achieved by direct compliance with the applicable emission rate~~ in Table 2 of subparagraph (c)(11)(A), (c)(12)(A)(ii), or (c)(13)(A)(iv)~~. A facility using in-tank controls shall only be modeled as a volume source and the resulting risk shall be compared to the same facility modeled as a point source.
4. Documentation which demonstrates that the method is enforceable, including an operation and maintenance plan, an inspection and maintenance schedule, and a recordkeeping plan.
5. A demonstration that the facility is at least ~~2~~75~~meters~~feet from a sensitive receptor.

Appendix 89 – Smoke Test to Demonstrate Capture Efficiency for ~~Ventilation Systems of~~an Add-on Air Pollution Control Device(s) Pursuant to Paragraph (ek)(76).

1. Applicability and Principle

1.1 Applicability. This method is applicable to all hard and decorative chromium electroplating and chromic acid anodizing operations where an add-on air pollution control device is used to reduce chromium emissions from the chromium electroplating or anodizing tank.

1.2 Principle. During chromium electroplating or anodizing operations, bubbles of hydrogen and oxygen gas generated during the process rise to the surface of the tank liquid and burst. Upon bursting, tiny droplets of chromic acid (chromium mist) become entrained in the air above the tank. Collection of this chromium mist is achieved ~~by the ventilation system associated~~ with the add-on air pollution control device for the tank(s) where chromium emissions are reduced downstream. Emission control efficiency at the exhaust of an add-on control device is related to capture efficiency at the inlet of the ~~ventilation system~~add-on air pollution control device. For this reason, it is imperative that 100% capture efficiency is maintained. A smoke device placed within the area where collection of chromic mist by the ~~ventilation system~~add-on air pollution control device occurs reveals this capture efficiency.

2. Apparatus

2.1 Smoke Generator. Adequate to produce a persistent stream of visible smoke ~~(e.g., Model #15-049 Tel-Tru™ T-T Smoke Sticks from E. Vernon Hill, Incorporated)~~.

3. Testing Conditions

The smoke test shall be conducted while the add-on air pollution control device is in normal operation and under typical draft conditions representative of the facility's chromium electroplating and/or chromic acid anodizing operations. This includes cooling fans and openings affecting draft conditions around the tank area including, but not limited to, vents, windows, doorways, bay doors, and roll-ups. The smoke generator must be at full generation during the entire test and operated according to manufacturer's suggested use.

3. Procedure

The smoke test shall be conducted over a minimum twelve point matrix evenly distributed over the entire liquid surface of each chromium electroplating or chromic acid anodizing tank vented to the add-on air pollution control device. Place the aperture of the smoke device at each point of the matrix at a height within one inch above the tank top. Observe collection of the smoke to the collection location(s) of the ~~ventilation system~~add-on air pollution control device. An acceptable smoke test shall demonstrate a direct stream to the collection location(s) of the ~~ventilation system~~add-on air pollution control device without meanderings out of this direct path. Record these observations at each of the points on the matrix providing a qualitative assessment of the collection of smoke to the ~~ventilation system~~add-on air pollution control device. The test shall also be documented by photographs or video at each point of the matrix.

Appendix 9~~10~~ – Surface Tension Measurement Procedure for a Stalagmometer

The stalagmometer shall first be properly cleaned before being used for the first time and after a period of storage. Properly clean the stalagmometer using the following procedure:

1. Set up stalagmometer in stand in a fume hood.
2. Place a clean 150 mL beaker underneath the stalagmometer then fill with reagent grade concentrated nitric acid. Immerse bottom tip (approximately ½”) of stalagmometer into the beaker.
3. Squeeze rubber bulb and pinch at the arrow up (1) position to collapse. Place bulb end securely on top end of stalagmometer. Carefully draw the nitric acid by pinching the arrow up (1) position until the level is above the top etched line.
4. Allow nitric acid to remain in stalagmometer for 5 minutes and then carefully remove the bulb allowing the acid to completely drain.
5. Fill a clean 150 mL beaker with distilled or deionized water. Using the rubber bulb per the instructions in Step #3, rinse and drain stalagmometer with deionized or distilled water until the inside is “water break” free.
6. Fill a clean 150 mL beaker with isopropyl alcohol. Again using the rubber bulb per Step #3, rinse and drain stalagmometer twice with isopropyl alcohol and allow the stalagmometer to dry completely.
7. Take a sample of the solution to be tested and adjust the solution to room temperature. Measure the specific gravity and record reading.
8. Fill a clean 150 mL beaker with solution to be tested. Immerse bottom end of stalagmometer into the beaker. Fill the stalagmometer per instructions in Step #3, making sure that the solution level is above the top etched line.
9. Raise the stalagmometer so that the bottom end is completely out of solution. Remove bulb and immediately place a finger on the top end of the stalagmometer. Carefully use the finger to bring the solution level down to the top etched line. Do not release finger at this time.
10. “Wipe” the excess solution on the lower tip by touching it against the side of the beaker.
11. Release fingertip to allow solution to drain and count number of drops until the level reaches the bottom etched line.

Calculations for Surface Tension

$$\text{Surface tension (dynes/cm)} = \frac{Sw * Nw * D}{N * Dw}$$

Sw = Surface tension of water at 25^{o}C or 77^{o}F (72.75 dynes/cm)
Nw = water drop number etched on instrument
D = measured specific gravity (g/ml)
N = # of solution drops
Dw = water density (1.0 g/mL)

PRECAUTIONS:

1. Make sure the stalagmometer is clean (no sludge or film)
2. No chips, cracks, etc
3. Vertical placement
4. No vibration
5. 20 drops per minute rate (10 dynes/cm) +/- 1 drop per minute
6. Performance checked with water. The number of drops etched on the instrument shall be verified with deionized water to +/- 1 drop. If the number of drops are not within 1 drop, then the stalagmometer shall be cleaned. If the cleaning process does not bring the drop count within 1 drop of the etched number on the instrument, then the operator shall:
   a) Purchase a new stalagmometer; or
   b) Use the number of drops recorded for the distilled water run as (Nw) in the equation instead of the number of drops etched on the stalagmometer.
7. Sample at room temperature.

Appendix 10 – Tier II and Tier III Hexavalent Chromium Tank Thresholds

1. Tier II Tank hexavalent chromium concentrations shall remain in the concentration range for the specified temperature and be required to comply with ~~sub~~paragraph (h)(~~4~~5)~~(B)~~. Tanks that exceed the hexavalent chromium concentration for a corresponding temperature for Tier II Tanks shall be considered a Tier III Tank and shall be required to comply with subparagraph (h)(4)(A).

Temperature (° F)	**Tier II Tank Hexavalent Chromium Concentration (ppm)**	**Tier III Tank Hexavalent Chromium Concentration (ppm)**
140 to <145° F	5,200 to <10,400	≥10,400
145 to <150° F	2,700 to <5,500	≥5,500
150 to <155° F	1,400 to <2,900	≥2,900
155 to <160° F	700 to <1,600	≥1,600
160 to <165° F	400 to <800	≥800
165 to <170° F	180 to <400	≥400
≥170° F	≥100 to <200	≥200

2. Electrolytic tanks, such as chromium electroplating or chromic acid anodizing tanks, with hexavalent chromium concentration greater than 1,000 ppm shall be considered a Tier III tank regardless of operating temperature.

3. Air sparged tanks with a hexavalent chromium concentration greater than 1,000 ppm shall be considered a Tier III tank regardless of operating temperature.

4. The owner or operator of a facility shall not be subject to the requirement of subparagraph (h)(4)(A) to vent a Tier III Hexavalent Chromium Tank to an add-on air pollution control device for one tank at a facility if the tank meets the following requirements:
   a) The surface area is less than or equal to four (4) square feet;
   b) The hexavalent chromium concentration is less than or equal to 11,000 ppm;
   c) The tank is operated and permitted at less than or equal to 210° F;
   d) The tank is operated at a temperature between 170-210° F for less than or equal to two and one-half (2.5) hours per week; and
   e) The tank complies with the tank cover requirements in paragraph (h)(5) and the temperature data logger requirements in paragraph (n)(3), and the data logger must log the duration of time and temperature of the tank to demonstrate compliance with (d) above.

   A Tier III Tank that fails to comply with any of the conditions listed in a through e shall be subject to subparagraph (h)(4)(A).

ATTACHMENT G

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Staff Report
Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

November 2018

Deputy Executive Officer
Planning, Rule Development, and Area Sources
Philip M. Fine, Ph.D.

Assistant Deputy Executive Officer
Planning, Rule Development, and Area Sources
Susan Nakamura

Planning and Rules Manager
Planning, Rule Development, and Area Sources
Jillian Wong, Ph.D.

Authors:	Neil Fujiwara – Air Quality Specialist Robert Gottschalk – Air Quality Specialist Yunnie Osias – Air Quality Specialist
Contributors:	John Anderson – Air Quality Analysis and Compliance Supervisor Jason Aspell – Senior Enforcement Manager Azar Dabiri – Senior Air Quality Engineer Mike Garibay – Supervising Air Quality Engineer Mitch Haimov – Senior Air Quality Engineering Manager Hamed Mandilawi – Senior Air Quality Engineer Ed Muehlbacher – Senior Air Quality Engineering Manager Eugene Kang – Program Supervisor Thomas Liebel – Supervising Air Quality Engineer Laura Saucedo – Principal Air Quality Chemist Melissa Sheffer – Senior Meteorologist Areio Soltani – Supervising Air Quality Inspector Bill Welch – Senior Air Quality Engineer Sumner Wilson – Principal Air Quality Instrument Specialist
Reviewed by:	Daniel Garcia – Program Supervisor Daphne Hsu – Senior Deputy District Counsel

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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Supervisor, Second District
County of San Bernardino

HILDA L. SOLIS
Supervisor, First District
County of Los Angeles

EXECUTIVE OFFICER:

WAYNE NASTRI

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EXECUTIVE SUMMARY

South Coast Air Quality Management (SCAQMD) Rule 1169 – Hexavalent Chromium – Chrome Plating and Chromic Acid Anodizing was adopted on June 3, 1988 and applied to chromium electroplating (hard and decorative) and chromic acid anodizing processes. On October 9, 1998, Rule 1169 was repealed and provisions were incorporated in Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations as part of Regulation XIV. This regulation includes rules regulating toxics and non-criteria pollutants.

Based on sampling, emissions testing, and ambient monitoring conducted near several facilities subject to Rule 1469 it was determined that increased concentrations of hexavalent chromium in a tank and application of heat and/or air sparging can result in significant emissions from a hexavalent chromium containing tank depending on the hexavalent chromium concentration and temperature. Proposed Amended Rule 1469 (PAR 1469) addresses hexavalent chromium containing tanks not previously known to be sources of hexavalent chromium emissions and includes requirements such as building enclosures, best management practices, and housekeeping provisions that minimize the release of fugitive emissions from chromium electroplating and chromic acid anodizing operations. PAR 1469 also has provisions to ensure continuous proper operation of point source pollution controls and contingency provisions to add pollution controls for a building enclosure for any facility that repeatedly fails to comply with the point source emission requirements or fails to shut down a tank after not passing a test to evaluate the collection efficiency of a tank with pollution controls.

PAR 1469 also incorporates the changes made to the United States Environmental Protection Agency's (U.S. EPA's) Chrome Plating National Emission Standards for Hazardous Air Pollutants (NESHAP) amended in September 2012. The NESHAP achieves further hexavalent chromium emission reductions by requiring more stringent emission limits for all facilities. For facilities that utilize chemical fume suppressants, surface tension limits have been lowered. Under Title 42 of the United States Code (U.S.C.) Section 7416, SCAQMD has the authority to adopt and enforce either equally effective or more stringent regulations than the NESHAP. Under California Health and Safety Code (H&SC) Section 39666(d), SCAQMD has the authority to adopt and enforce either equally effective or more stringent regulations than the NESHAP or the state Airborne Toxic Control Measure (ATCM).

This Draft Staff Report is organized into three chapters. Chapter 1 provides background information regarding PAR 1469 and provides a general description of electroplating and chromic acid anodizing operations and associated hexavalent chromium generating tanks. Chapter 1 also provides the results of ambient monitoring and emissions testing that SCAQMD staff has conducted at and near Rule 1469 facilities. Chapter 2 provides a summary and explanation of provisions in PAR 1469. Chapter 3 provides a summary of the impact assessments, which includes the environmental analysis and socioeconomic impact assessment, draft findings, and the comparative analysis of PAR 1469.

CHAPTER 1: BACKGROUND

INTRODUCTION

SCAQMD Rule 1469 establishes emission limits for hard and decorative electroplating and chromic acid anodizing operations based on throughputs and proximity to sensitive receptors and requires ongoing monitoring, initial performance testing of add-on control devices, housekeeping, reporting, and recordkeeping. The most recent amendment in 2008 incorporated the most stringent requirements of the amended state ATCM for Chrome Plating and Chromic Acid Anodizing Operations. The state ATCM had additional provisions to minimize hexavalent chromium emissions from compressed air cleaning, requirements for new facilities and record retention, and requirements for increased monitoring of air pollution controls.

PAR 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations is designed to reduce emissions from point sources that previously were not known to be significant sources of hexavalent chromium and to establish additional provisions to minimize the release of fugitive hexavalent chromium emissions from electroplating and chromic acid anodizing operations and associated processes. Off-site ambient monitoring and source testing near three chromic acid anodizing facilities identified uncontrolled sodium dichromate tanks to be the source of substantial hexavalent chromium emissions. These tanks need additional emission controls. Based on results from ambient monitoring and additional emissions testing and sampling, PAR 1469 establishes new requirements for certain hexavalent chromium process tanks associated with electroplating and chromic acid anodizing operations, incorporates additional requirements for building enclosures, provides comprehensive housekeeping requirements, and includes periodic source testing, and updates monitoring and reporting requirements to better control point and fugitive hexavalent chromium emissions. PAR 1469 is also designed to harmonize Rule 1469 with the 2012 National Emission Standards for Hazardous Air Pollutants (NESHAP) for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (Chrome Plating NESHAP).

BACKGROUND

Rule 1169 – Hexavalent Chromium – Chrome Plating and Chromic Acid Anodizing was adopted on June 3, 1988 and applies to chromium electroplating (hard and decorative) and chromic acid anodizing processes. On October 9, 1998, Rule 1169 was repealed and provisions were incorporated in Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations as part of Regulation XIV. This regulation includes rules regulating toxics and non-criteria pollutants.

Rulemaking for PAR 1469 was initiated by SCAQMD staff in 2015 as a result of findings from ambient air monitoring and sampling near a chromic acid anodizing facility in Newport Beach. SCAQMD staff had been conducting ambient air monitoring near the Newport Beach facility since 2009. In 2012 and 2013, levels of hexavalent chromium increased substantially. These increases triggered a series of further evaluations by SCAQMD staff, including additional monitoring, sampling, and engineering evaluations, which identified several conditions that contributed to the elevated hexavalent chromium levels. For example, cross-drafts in the building that housed the chromic acid anodizing process allowed emissions to escape out of the building and also interfered with the collection efficiency of pollution controls. High hexavalent chromium emissions from a heated sodium dichromate seal tank that was not regulated under Rule 1469 also contributed to the elevated levels. SCAQMD and the Newport Beach facility entered into a stipulated Order for

Abatement requiring the facility to shut down when ambient monitors detect an average ambient concentration exceeding a specified threshold level. As a result, the Newport Beach facility implemented significant changes to address hexavalent chromium emissions such as additional pollution controls for its chromic acid anodizing process line (including the heated sodium dichromate seal tank), and construction of a building enclosure under negative air vented to pollution controls. Average levels of hexavalent chromium near the Newport Beach facility have greatly declined since the facility implemented these changes and modified their operations.

In 2015, SCAQMD rules staff began site visits at other Rule 1469 facilities to get a better understanding of current operating conditions, such as types of building enclosures, and housekeeping practices, and to also evaluate other process tanks that could also be sources of hexavalent chromium emissions similar to a heated sodium dichromate seal tank. During this initial phase of the rule development process, SCAQMD staff, in a separate program was conducting air monitoring in the city of Paramount to investigate potential sources of hexavalent chromium near a metal forging facility. In October 2016, SCAQMD expanded its monitoring network in Paramount and began monitoring near a chromic acid anodizing facility. Initial monitored concentrations of hexavalent chromium were 26 nanograms per cubic meter (ng/m^3) near a Paramount facility. For comparison, the background levels of hexavalent chromium, based on the nearest Multiple Air Toxic Emission Study IV monitor data (Compton), was 0.1 ng/m^3. Further evaluation of the source of emissions again pointed to a heated sodium dichromate seal tank, combined with cross-drafts near a chromic acid anodizing tank and heated sodium dichromate seal tank that allowed emissions to flow directly out of the facility's building, as the main contributor.

Based on ambient monitoring data, sampling, and emissions testing, the application of heat and/or air sparging can result in substantial hexavalent chromium emissions from tanks. These emissions increase proportionately with the temperature and concentration of hexavalent chromium in the tank. PAR 1469 addresses tanks that were not previously known to be sources of hexavalent chromium emissions. It requires building enclosures, best management practices, and housekeeping provisions to minimize the release of fugitive emissions from these operations. PAR 1469 also has provisions to ensure the continuous proper operation of point source pollution controls.

PAR 1469 also incorporates the changes made to the U.S. EPA's Chrome Plating NESHAP amended in September 2012. The NESHAP achieves further hexavalent chromium emission reductions by requiring more stringent emission limits for all facilities. In addition to emission limit reductions, housekeeping measures have also been made more stringent. For facilities that utilize chemical fume suppressants, surface tension limits have been lowered. Under Title 42 of the U.S.C. Section 7416, SCAQMD has the authority to adopt and enforce either equally effective or more stringent regulations than the NESHAP. Under H&SC Section 39666(d), SCAQMD has the authority to adopt and enforce either equally effective or more stringent regulations than the NESHAP or the state ATCM.

Public Process

PAR 1469 is being developed through an extensive public process. A working group was formed to provide the public and stakeholders an opportunity to discuss important details about the proposed amendments to the rule and provide SCAQMD staff with input during the rule development process. The working group is comprised of a variety of stakeholders including representatives from industry, consultants, environmental groups, community groups, and public agency representatives. SCAQMD has held 13 working group meetings on March 23, 2017, May 18, 2017, June 29, 2017, August 2, 2017, August 31, 2017, September 20, 2017, October 26, 2017, November 29, 2017, January 4, 2018, February 6, 2018, February 27, 2018, April 4, 2018, and July 17, 2018. Working group meetings for this rulemaking were well attended with approximately 100 people in attendance per meeting and another 35 people on the phone. On average, working group meetings were 3 to 4 hours long. In addition, SCAQMD held three Public Workshops on November 1, 2017, December 7, 2017, and February 8, 2018. Two additional public outreach meetings were held in August 2018 at the request of Supervisor Solis to better inform the public about PAR 1469.

HEXAVALENT CHROMIUM

A "toxic air contaminant" is defined as an "air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health" (H&SC Section 39655(a)). In 1986, CARB identified hexavalent chromium as a carcinogenic toxic air contaminant based on a review of available scientific evidence.

Hexavalent chromium was measured in each of SCAQMD's Multiple Air Toxics Exposure Studies (MATES). These studies measured levels of air toxics in mostly residential or commercial areas. While MATES showed that hexavalent chromium levels have decreased over the past couple decades, this air pollutant was still the seventh largest contributor to air toxics cancer risk in the South Coast Air Basin (Basin) in the most recent MATES (MATES IV).

Hexavalent chromium may occur as aerosols or particulate matter in the air, which can be inhaled directly or deposited on soil or water, which can then be ingested. Contact with soil containing hexavalent chromium may transfer to the hands and then to the mouth. Young children may put their hands in their mouths more frequently than adults and therefore are more likely to consume contaminated soil. Chromic acid, a form of hexavalent chromium, is created as a mist during electroplating, which can be inhaled. Chromic acid can be absorbed through skin and ingested if deposited on the skin. Exposure to hexavalent chromium can increase the risk of developing certain types of cancer or result in other adverse health effects.

Inhalation of hexavalent chromium can cause both cancer and non-cancer health effects. Inhalation of hexavalent chromium over a long period of time increases the risk of lung cancer and nasal cancer. The non-cancer effects of being exposed to hexavalent chromium at high levels over time can cause or worsen health conditions such as irritation of the nose, throat and lungs; allergic symptoms (wheezing, shortness of breath); and nasal sores and perforation of the membrane separating the nostrils (for example, at very high air levels in workplaces).

California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) has developed cancer potency factors which can be used to estimate the cancer risk associated with exposure to hexavalent chromium. Based on OEHHA's methodology to estimate health risk, the continual exposure to 0.045 ng/m^3 of hexavalent chromium for 30 years would increase the cancer risk by 25 in a million for a residential or sensitive receptor. Exposure over shorter periods of time would be associated with smaller increases in cancer risk. In MATES IV, the average levels of hexavalent chromium in mostly residential and commercial areas across the South Coast Basin was 0.06 ng/m^3. SCAQMD staff has taken measurements very close to facilities emitting hexavalent chromium and has found that hexavalent chromium levels near such facilities can be substantially higher than the background levels measured in MATES IV.

REGULATORY HISTORY

Chrome plating and chromic acid anodizing facilities are subject to local, state, and federal requirements. Rule 1469 incorporates provisions that are equal to or more stringent than the Chrome Plating state ATCM and federal NESHAP.

U.S. EPA NESHAP: Plating and Polishing Industry

In January 1995, the U.S. EPA promulgated the NESHAP for Chromium Emissions from Hard and Decorative Chromium Plating and Chromic Anodizing Tanks.

On June 12, 2008, the U.S. EPA issued 40 CFR Part 63 Subpart WWWWWW, the Plating and Polishing NESHAP for area sources. It addressed national air toxics standards for smaller-emitting sources, known as area sources, in the plating and polishing industry. The requirements apply to existing and new area sources in the plating and polishing rule. The rule affected existing and new plating and polishing facilities and applies to plating and polishing tanks, dry mechanical polishing operations, and thermal spraying operations that use or emit compounds of one or more of the following metal toxic air pollutants: cadmium, chromium, lead, manganese, and nickel. It includes management practices such as use of wetting agent/fume suppressants, use of tank covers or control devices, and capture and control of emissions from thermal spraying and dry mechanical polishing.

In September 2012, U.S. EPA amended 40 CFR Part 63.340, the NESHAP for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks. The federal regulation reduced emission limits, decreasing a facility’s mass emissions. Chromium electroplating and chromic acid anodizing which utilize chemical fume suppressants must maintain their electroplating bath to 40 dynes/cm or less. The addition of perfluorooctane sulfonic acid (PFOS) based fume suppressants would be prohibited (see Chemical Fume Suppressants section under Control Technologies below).

The 2012 NESHAP for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (Chrome Plating NESHAP) reduced emission limits for total chromium as shown in Table 1-1.

Table 1-1: 2012 NESHAP Revised Emission Limits

Operation	Previous Total Chromium Limits	2012 Total Chromium Limits
Large Hard Chromium Electroplating	0.015 mg/dscm	0.011 mg/dscm
Small Hard Chromium Electroplating	0.030 mg/dscm	0.015 mg/dscm
Decorative Chromium Electroplating	0.010 mg/dscm	0.007 mg/dscm
Chromium Anodizing	0.010 mg/dscm	0.007 mg/dscm

Housekeeping practices were added in Table 2 to 40 CFR 63.342, which applies to all source categories and are summarized below:

- Store any substance used in an affected chromium or chromium anodizing tank that contains hexavalent chromium in a closed container in an enclosed storage area and use a closed container when transporting.
- Install technology and implement practices to minimize spills of bath solution and reduce drag out when parts are being moved or rinsed from the tank.
- Clean-up spills from an affected chromium electroplating or chromium anodizing tank within 1 hour.
- Clean surfaces regularly.
- Prohibit buffing, grinding, or polishing operations in the same room as anodizing or electroplating unless a physical barrier is in place.
- Store chromium containing wastes generated from housekeeping activities in a manner that does not generate fugitive dust.

Chromium Plating ATCM

In February 1988, the California Air Resources Board (CARB) adopted the Chromium Plating ATCM to reduce emissions of hexavalent chromium from hard and decorative chromium electroplating and chromic acid anodizing operations. The ATCM required that all hard plating tanks and anodizing tanks be vented to emission collection systems and established best available control technology (BACT) for the equipment. It also established control efficiency limits for add-on air pollution control devices and alternative emission limits based on the annual hexavalent chromium emissions of plating and anodizing shops. More stringent limits were required of larger facilities than those of smaller facilities, with the goal of reducing emissions from plating and anodizing tanks by at least 95 percent.

On May 21, 1998, CARB amended the Chrome Plating ATCM to consolidate the requirements from both the state and federal chrome plating regulations. Emission limits for decorative chrome and chromic acid anodizing were replaced with emissions limits from the federal chrome plating regulation. The amendment also expanded the rule's applicability to trivalent chrome operations while continuing to regulate hexavalent chrome operations. It added performance test requirements, inspection and maintenance requirements, monitoring provisions, recordkeeping and reporting requirements, and provisions for requesting alternative requirements.

On October 24, 2007, CARB amended the ATCM a second time. The amended ATCM provided further hexavalent chromium emission reductions by requiring more stringent emission limits for some facilities and ensured that construction of new facilities are not sited near sensitive receptors.

Generally, except for small facilities, the limits required the installation or upgrade of add-on air pollution control devices at plating tanks. The amendment required the use of HEPA filters, which were found to reduce emissions by over 99.9 percent, or the use of controls that resulted in equivalent emissions reductions, at many facilities. In addition to emission limit changes, the ATCM also added housekeeping measures.

SCAQMD Rules

Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations is the primary air toxics rule that affects chromium electroplating and chromic acid anodizing operations. In addition to Rule 1469, Rule 1402 - Control of Toxic Air Contaminants from Existing Sources also applies to Rule 1469 facilities as discussed below.

Rule 1469 – Hexavalent Chromium

In January 1986, CARB identified hexavalent chromium as a toxic air contaminant in accordance with H&SC Sections 39650, *et seq*. Rule 1169 – Hexavalent Chromium – Chrome Plating and Chromic Acid Anodizing was one of the first source-specific toxic rules and was adopted on June 3, 1988 to reduce hexavalent chromium emissions from chromium electroplating (hard and decorative) and chromic acid anodizing processes. SCAQMD amended Rule 1169 in September 1989 and December 1990.

On October 9, 1998, SCAQMD adopted Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations and repealed Rule 1169. The 1998 adoption of Rule 1469 combined the requirements of Rule 1169, the Chrome Plating state ATCM, and federal NESHAP. Under H&SC Section 39666, air districts have the option of either directly enforcing the ATCM without adopting a regulation, or adopting an equally effective or more stringent regulation. Rule 1469 also included additional monitoring, recordkeeping and reporting requirements, and additional emission standards that in some cases are more stringent than existing requirements for hard and decorative chrome plating operations, and additional requirements for trivalent chrome plating operations, which were already widely practiced by the chrome plating industry.

On May 2, 2003, Rule 1469 was amended. The public rulemaking process included industry representatives, environmental and community groups, staff from SCAQMD and other agencies, technical experts, representatives from the Small Business Alliance and the Ethnic Community Advisory Group, a facilitator, and an independent observer. The proposed amendments set general requirements for all facilities and more stringent requirements for facilities for which the nearest residence or sensitive receptor is within 25 meters or for which the nearest school is within 100 meters. Facilities were required to meet an ampere-hour threshold that is based on a calculated cancer risk of 10 in a million or install controls. In general, facilities were required to meet an emission limit based on ampere-hour thresholds or estimate their cancer risk directly through an emissions inventory and health risk assessment. The 2003 amendments required installation of ampere-hour meters on plating and anodizing tanks, use of certified chemical fume suppressants, housekeeping practices, operating training and certification, and emission limits based on the distance to the nearest residence or sensitive receptor.

On December 5, 2008, Rule 1469 was amended to be consistent with the recently amended Chrome Plating state ATCM. The amendment further reduced hexavalent chromium emissions by setting lower emission limits for some operators and establishing more stringent housekeeping requirements. Additional provisions beyond the ATCM were also incorporated such as more detailed housekeeping requirements, enhanced monitoring, recordkeeping for waste materials, and testing of add-on air pollution control devices. These requirements were intended to ensure compliance and minimize drag-out emissions during chromium electroplating and chromic acid anodizing operations.

Rule 1402 – Control of Toxic Air Contaminants from Existing Sources

Rule 1402 – Control of Toxic Air Contaminants from Existing Sources was adopted by the SCAQMD Governing Board in 1994 and last amended in 2016. The objective of Rule 1402 is to minimize health risks from air toxics. This rule applies to existing facilities within SCAQMD's jurisdiction whose facility-wide toxic air contaminant emissions exceed specific risk levels. Rule 1402 is designed to implement the Air Toxics Hot Spots Program (AB 2588) and requires risk reduction measures if applicable. AB2588 is a statewide program that collects emissions data of air toxics, identifies facilities having localized impacts, determines health risks, and notifies affected individuals. Individual facilities found to emit high levels of air toxics must submit a Health Risk Assessment to estimate the health risks to the surrounding communities. AB 2588 also allows for air districts to designate "industry-wide source" facilities, where compliance may be handled collectively, rather than individual compliance that would impose severe economic hardships. SCAQMD has identified metal plating and finishing facilities as an industry-wide source category.

Although Rule 1469 facilities are in general identified as industry-wide sources under AB 2588, there are approximately 24 Rule 1469 facilities that are in the core AB 2588 program. Facilities in the core AB 2588 program are generally larger chromium plating or anodizing facilities and are required to report air toxic emissions annually and provide a more detailed air toxics emissions inventory every fourth year (i.e. quadrennial reporting). The AB 2588 emissions reporting covers Rule 1469 equipment as well as other air toxics emitting sources that are not covered under Rule 1469 such as chromium spraying operations, nickel and cadmium plating operations, and any other air toxics emitting processes or equipment. During this quadrennial toxics emissions reporting, SCAQMD staff calculates the facility's priority score. If the priority score is over 10, the facility is required to submit an Air Toxics Inventory Report and Health Risk Assessment. Under Rule 1402, if the cancer health risk is above the action risk level (25 in a million), the facility must submit and implement a Risk Reduction Plan. The Health Risk Assessment is based upon emissions from all processes at the facility, in addition to Rule 1469 sources.

On October 7, 2016, Rule 1402 was amended to add provisions for Potentially High Risk Level Facilities where SCAQMD has evidence that the facility is contributing to a significant health risk – cancer risk greater than 100 in-a-million. Rule 1402 sets the hexavalent chromium reporting thresholds at 0.002 lb/yr; which once exceeded, requires a facility to submit a total facility air toxics emissions inventory to SCAQMD. In addition, state law (H&SC Section 44391) requires any facility with significant risk (100 in a million cancer risk or a chronic hazard index of 5.0 for Rule 1402) to reduce risk.

Other SCAQMD Toxics Rules Regulating Metal Particulates

PAR 1469 includes requirements that are generally based on provisions in other SCAQMD toxics rules, such as, building enclosures, housekeeping measures, best management practices and compliance plans. Examples of rules that include these types of provisions include Rule 1420.2 – Emission Standards for Lead from Metal Melting Facilities and Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities.

Rule 1420.2 addressed fugitive lead emissions through housekeeping and maintenance requirements, and total enclosures of areas where metal melting operations and associated operations are conducted. Additional requirements included a permanent total enclosure with negative air. Rule 1430 required the installation and implementation of point source controls for grinding operations, enclosures, and housekeeping measures at metal forging facilities. Both rules included parameter monitoring to provide greater assurance of continued compliance with point source add-on pollution control equipment.

2015 OEHHA Guidelines

On March 6, 2015, OEHHA approved revisions to their Risk Assessment Guidelines (2015 OEHHA Guidelines). The 2015 OEHHA Guidelines were triggered by the passage of the Children's Health Protection Act of 1999 (SB 25, Escutia) requiring OEHHA to ensure infants and children are explicitly addressed in assessing risk. Over the past decade, advances in science have shown that early-life exposures to air toxics contribute to an increased estimated lifetime risk of developing cancer, or other adverse health effects, compared to exposures that occur in adulthood. The revised risk assessment methodology incorporates the most recent data on infants and childhood and adult exposure to air toxics. The 2015 OEHHA Guidelines incorporate age sensitivity factors and other methodology changes increases the estimated cancer risk for residential and sensitive receptors by more than three times for air toxics such as hexavalent chromium which have multiple pathways of exposure in addition to inhalation. Health risks for off-site worker receptors are similar between the previous and 2015 OEHHA Guidelines because the methodology for adulthood exposures remains relatively unchanged. Even though there may be no increase in air toxics emissions at a facility, the estimated cancer risk using the 2015 OEHHA Guidelines is expected to increase.

European Union's European Chemicals Agency

On April 17, 2013, the European Union's (EU's) regulatory authority that implements legislation on chemical safety—the European Chemicals Agency (ECHA)—placed several of the most common forms of hexavalent chromium on its "Authorisation List," citing them as carcinogenic and mutagenic, and classifying them as "substances of very high concern." The compounds that ECHA singled out are chromium trioxide, acids generated from chromium trioxide, sodium dichromate, potassium dichromate, ammonium dichromate, potassium chromate, and sodium chromate. Several of these compounds are used extensively in the chrome electroplating and anodizing processes.

After an established sunset date, chemicals that are placed on the Authorisation List are prohibited from use in, and importation into the EU, unless companies that produce or use them submit applications to exempt them for specific uses. If an application is approved by ECHA, the chemical will continue to be permitted for those uses and in some cases for both upstream producers and downstream users. The sunset date for hexavalent chromium compounds was September 21, 2017.

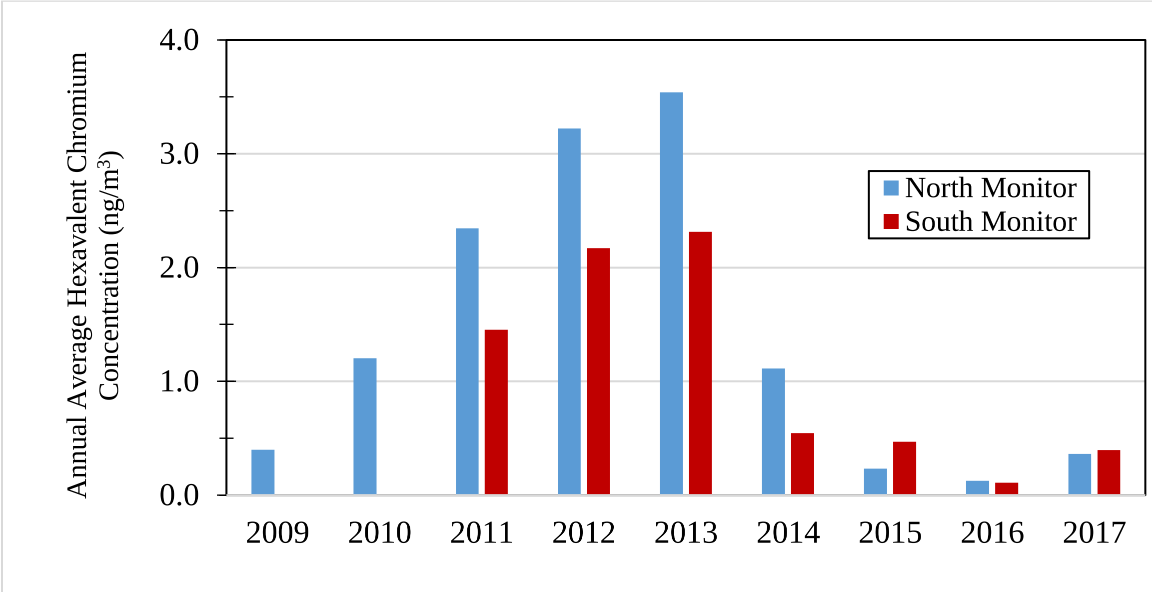
The EU's Committees for Risk Assessment and Socio-economic Analysis have approved a number of authorisations or exemptions with specific conditions for use of hexavalent chromium applied to the surface of products. These authorisations cover a broad range of industry sectors such as car manufacturing, aerospace, aeronautics but also the manufacture of metals and construction equipment and is made on behalf of a number of downstream users. For more information on the EU's program and authorisations, please refer to their website at https://echa.europa.eu.

AMBIENT MONITORING AND SAMPLING NEAR AND AT CHROMIC ACID ANODIZING FACILITIES

SCAQMD staff conducted ambient monitoring of hexavalent chromium near five chromic acid anodizing facilities located in various cities in the Basin: a facility in Newport Beach, a facility in Paramount, a facility in Long Beach, and two facilities in Compton. Hexavalent chromium levels were elevated near the Newport Beach, Paramount, and Long Beach facilities. Based on the 10 monitoring sites in SCAQMD's MATES IV study, average hexavalent chromium levels in the Basin are approximately 0.06 ng/m^3. None of the MATES IV monitors are near Rule 1469 facilities and are generally sited in both residential and light commercial areas throughout the Basin. The MATES IV study can be found here: http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iv.

Levels near the Newport Beach facility, as measured by monitors north and south of the facility, were averaging 0.4 ng/m^3 in 2009 (as measured by the north monitor), and rose to over 3.5 ng/m^3 in 2013. The facility began implementing changes to their operational procedures and by the end of 2016 installed and operated control equipment to minimize emissions; the average annual concentration dropped steadily from 2013 to 2016. Average concentration levels were below 0.2 ng/m^3 in 2016. Average emissions in 2017 saw a slight rise to below 0.4 ng/m^3. The increase in emissions in the year, including the more dramatic increase seen in July of 2017, may be attributed to construction work where concrete was being broken up, and the rubble was being removed from the facility.

Figure 1-1: Annual Average Hexavalent Chromium Levels at Newport Beach Facility



On April 4, 2014 and April 16, 2014, SCAQMD staff conducted source testing at the Newport Beach facility. The purpose of the testing was to identify potential causes of elevated ambient hexavalent chromium levels measured. Previously at this facility, high air monitoring results had been reduced by upgrading the filtration system and implementing various control methods to reduce emissions from chromate coating operations. The monitor locations were chosen based on the highest hexavalent chromium ambient monitoring results detected at the facility's Building #2 monitors, and previous highest glass plate sampling results taken by SCAQMD inspectors from Building #2 and #3 locations. Table 1-2 summarizes the results of the first round of emissions testing.

Table 1-2: Newport Beach Facility
Hexavalent Chromium Emissions Test Results from April 4, 2014

Summary of Emissions	Measured Concentration (ng/m^3)	Mass Emission Rate (lb/hr)	Emission Rate (mg/A-hr)
Emissions from Anodizing Tank	222,000	No Data	No Data
Emissions from Sodium Dichromate Seal Tank	217,000	No Data	No Data
Building #2 Roof Vent	6,520	6.82E-04	No Data
Anodizing Tank Control System Exhaust	66.3	7.19E-07	0.0068
Building #3 Roof Vent	18.6	No Data	No Data

SCAQMD staff determined that the fugitive emissions from the chromic acid anodizing process resulted from air agitation, lack of mist suppressant, incomplete emissions capture, and crossdrafts in the room. During the April 4, 2014 test, the anodizing tank was in operation. A second set of tests were conducted when the anodizing tank was not in operation and Table 1-3 provides a summary of the results to better understand the contribution of other sources.

Table 1-3: Newport Beach Facility
Hexavalent Chromium Emissions Test Results from April 16, 2014

Summary of Emissions	Measured Concentration (ng/m^3)	Mass Emissions Rate (lb/hr)
Emissions from Sodium Dichromate Seal Tank	97,200	No Data
Building #2 Roof Vent	2,510	1.64E-04
Spray Booth #1 Control System Exhaust	36.0	1.43E-06
Interior of Building #3 Above Tap Water Rinse Tank	14.0	No Data
Spray Booth #2 Control System Exhaust	10.8	4.58.E-07

The measured concentration from the sodium dichromate seal tank were less than half of the first test results. As noted above, during this emissions test the nearby anodizing tank was not in operation, indicating that previous emissions test results from the sodium dichromate seal tank may have been elevated due to crossdrafts that transported emissions from the anodizing tank. Since the sodium dichromate tank is an electro-less tank process, it is not regulated under Rule 1469. The elevated levels of hexavalent chromium emissions coming from the sodium dichromate seal tank was more than 13 times the NESHAP's 7,000 ng/m^3 concentration limit for a controlled chromic acid anodizing tank. The elevated levels indicated a need to control these tanks.

Ambient monitoring levels near the Paramount facility were initially near 11 ng/m^3 when monitoring began in the latter part of 2016, and they currently averaged below 0.25 ng/m^3. In addition, ambient monitoring levels near the Long Beach facility were initially near 0.9 ng/m^3 when monitoring began in May 2017, and they currently average below 0.4 ng/m^3. These facilities had various types of equipment subject to SCAQMD rules and regulations and permit requirements. Some of the potential on-site sources of emissions include the chrome anodizing line, nickel and cadmium plating, curing and drying ovens, paint spray booths, abrasive blasting equipment, waste water treatment system, and miscellaneous natural gas combustion sources. In addition, equipment such as tanks, racks, and drums, and operations such as packaging, product transfer, and maintenance and cleaning activities may have the potential to contribute to fugitive emissions. Information on ambient air monitoring in the communities can be found here: http://www.aqmd.gov/home/library/clean-air-plans/air-toxics-action-plan.

Ambient monitoring can provide information about sources that were not known and verification of compliance with an existing rule or regulation. Ambient monitoring near the Rule 1469 facilities in Newport Beach, Paramount, and Long Beach provided information about previously unknown sources of hexavalent chromium emissions. Ambient monitoring was also used to determine emission trends from facilities after they implemented control measures and installed add-on controls. There are limitations with ambient monitoring, particularly if the monitor cannot be sited in a location that will capture the maximum ground-level concentration for a specific site or if there are multiple sources that are contributing to the reading at the same ambient air monitor. Through the rulemaking for PAR 1469, it was determined that there is sufficient evidence based on ambient monitoring, emissions testing, and other investigative activities that there are tanks that were not previously known that have significant hexavalent chromium emissions that need pollution controls. As a result, the focus of PAR 1469 is to require pollution controls on these tanks. SCAQMD staff will address ambient air monitoring in a separate rulemaking process under Proposed Rule 1480 – Air Toxics Metals Monitoring, which will include a variety of industry sources that have toxic metal particulate emissions.

AFFECTED RULE 1469 FACILITIES

PAR 1469 will affect chromium electroplating or chromic acid anodizing facilities. Based on SCAQMD permitted equipment data and internet searches, industry representatives provided lists of potential Rule 1469 facilities. SCAQMD staff followed up with phone calls to the facility operators inquiring about their operations, and if there was sufficient information indicating the facility could potentially be a Rule 1469 facility, SCAQMD staff visited the facility. SCAQMD staff identified 115 facilities that either conduct decorative or hard chromium electroplating or chromic acid anodizing operations within SCAQMD's jurisdiction. Of the 115 affected facilities, 47 facilities conduct decorative hexavalent chromium plating, 31 facilities conduct hard hexavalent chromium plating, 31 facilities conduct chromic acid anodizing, four facilities conduct trivalent chromium plating only, and two facilities that conduct both chromic acid anodizing and hard hexavalent chromium plating. All 115 facilities are categorized using North American Industry Classification System (NAICS) code listed below in Table 1-1.3. This universe of facilities and tanks were obtained via SCAQMD's equipment permitting database and staff-conducted surveys of facilities.

The majority of chromium electroplating and chromic acid anodizing facilities are considered job shops, which typically perform a wide range of metal finishing services in addition to chromium electroplating (i.e. nickel plating, copper plating) and offer these services for contract. Job shops are independent operators that serve a variety of industries. The most common electroplating processes in job shops include nickel, copper, zinc and chromium. The automotive, computer/electronics, machinery/industrial equipment and defense/government are the four largest segments of industry served by all electroplaters and anodizers. In addition, fasteners are a large industry segment for job shops.

Different from job shops are captive shops used in industries where chromium electroplating is used as a secondary process to aid in production. Captive shops are found within companies that manufacture products rather than specialize in metal plating. In captive shops, the most common processes include nickel, chromium and zinc electroplating and anodizing. Captive shops typically have a higher degree of automation, due to their more predictable finishing requirements.

Table 1-4: NAICS Codes for PAR 1469 Affected Facilities

Industry	NAICS Code	# of Facilities
Fabricated Metal Manufacturing	**332**	**93**
Metal Crown, Closure, and Other Metal Stamping (except Automotive)	332119	1
Saw Blade and Hand Tool Manufacturing	332216	1
Machine Shops	332710	3
Bolt, Nut, Screw, Rivet, and Washer Manufacturing	332722	2
Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	332812	2
Electroplating, Plating, Polishing, Anodizing, and Coloring	332813	82
Plumbing Fixture Fitting and Trim Manufacturing	332913	2
Other Manufacturing	**333-337**	**12**
Other Industrial Machinery Manufacturing	333249	1
Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	333514	1
Cutting Tool and Machine Tool Accessory Manufacturing	333515	1
Other Measuring and Controlling Device Manufacturing	334519	2
Motor and Generator Manufacturing	335312	1
Motor Vehicle Gasoline Engine and Engine Parts Manufacturing	336310	1
Other Motor Vehicle Parts Manufacturing	336390	1
Aircraft Manufacturing	336411	1
Other Aircraft Parts and Auxiliary Equipment Manufacturing	336413	2
Showcase, Partition, Shelving, and Locker Manufacturing	337215	1
Wholesale and Retail Trade	**42, 44**	**2**
Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers	423860	1
Motorcycle, ATV, and All Other Motor Vehicle Dealers	441228	1
Professional, Scientific, and Technical and Other Services	**54, 56**	**5**
All Other Professional, Scientific, and Technical Services	541990	1
All Other Support Services	561990	4
Repair and Maintenance	**811**	**3**
Automotive Body, Paint, and Interior Repair and Maintenance	811121	1
Other Electronic and Precision Equipment Repair and Maintenance	811219	1
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	811310	1
Total		**115**

PROCESS DESCRIPTION

Chromium electroplating and chromic acid anodizing are electrolytic processes, where parts and substrates are submerged in a bath containing chromic anhydride (CrO_3), commonly called chromic acid. Many of the Rule 1469 facilities have other plating tanks using metals such as nickel and cadmium. Those tanks are covered under a separate rule, Rule 1426.

Hard Chromium Electroplating

Hard chromium electroplating involves depositing a "thick" layer of chromium (measured in thousandths of an inch) on a part, imparting corrosion protection, wear resistance, and lubricity and oil retention, among other properties. Examples of parts which are hard chromium electroplated include engine parts and industrial machinery and tools. It is nearly always applied to parts made of steel. Because of the thickness of the electroplating layer, electroplating duration is measured in hours or days.

Decorative Chromium Electroplating

Decorative chromium electroplating involves depositing a thin layer of chromium (measured in millionths of an inch), which gives a decorative and protective finish. Examples of parts which are decorative chromium electroplated include furniture components, bathroom fixtures, and car bumpers and wheels. Electroplating duration is measured in seconds or minutes.

Chromic Acid Anodizing

Chromic acid anodizing involves electrolytic oxidation of a surface to produce a wear and corrosion resistant surface without depositing a metallic chromium layer. Anodizing is an electrochemical process during which aluminum is the anode. When an electric current passes through the electrolyte, it converts the metal surface to a durable aluminum oxide. The difference between electroplating and anodizing is that the oxide coating is integral to the metal substrate as opposed to being a metallic coating deposition. The oxidized surface is hard and abrasion resistant, and it provides some degree of corrosion resistance.

Electrolytic Tanks

During the electroplating process, hydrogen gas forms very small bubbles, which have high misting potential. The gas bubbles entrain chromic acid and form chromic acid mist at the surface of the electroplating bath. A similar process occurs as oxygen bubbles break the surface of the electroplating bath. The magnitude of emissions depends on several electroplating variables, including the concentration of chromic acid in the bath, ampere-hours used during electroplating, bath temperature, bath purity, and surface tension. Bubble formation due to electrolysis is the primary mechanism by which hexavalent chromium emissions are generated (chemical fume suppressants, discussed at greater length in the Control Technologies Section below, are added to electrolytic tanks to prevent and control bubble formation).

Non-Electroplating or Non-Anodizing Tanks

Chromium electroplating and chromic acid anodizing facilities may have multiple tanks that are in the process line. The tanks either prepare or finish parts that will be anodized or electroplated, but are not considered anodizing or electroplating tanks themselves. Some of these have been identified to contain hexavalent chromium. The tanks contain hexavalent chromium as a by-product of the operation, intentional or unintentional contamination from the previous tank, or hexavalent chromium is a constituent of the material in the tank. Hexavalent chromium tanks may be heated, air sparged, or rectified. Heated tanks can cause the tanks to reach temperatures that generate bubbles. The gas bubbles contain hexavalent chromium and rupture at the surface, generating hexavalent chromium emissions. Air sparging is the process of agitating the tank bath to create an even mixture. The tank is aerated and bubbles are generated and as a result release hexavalent chromium emissions when they reach the surface. SCAQMD staff identified several tank operations that can be sources of hexavalent chromium emissions, which are discussed below:

- *Drag-Out/Rinse Tanks*
  Following the anodizing or electroplating of a part, the part can be placed in a drag-out/rinse tank. This tank collects liquid from the previous tank and rinses the part. The drag-out tank is a rinse tank initially filled with pure water. Air agitation is often used to aid the rinsing process because there is no water flow in the tank to cause turbulence. The rinse tanks may also be heated, depending upon the operation. As the plating line is operated, no additional water is added to the tank, thus the chemical concentration and the amount of metals in the tank increase as more work is processed. The liquid can remain in the tank or be processed as waste.
- *Seal Tanks*
  Sealing closes the porous surface generated during the anodizing process, which gives the product maximum corrosion resistance and minimizes the wear resistance of the anodized oxide layer. The anodized part is immersed in either hot water, nickel acetate, or dichromate seal. The seal tanks are heated to near boiling temperatures.
- *Passivation Tanks*
  Passivation is a chemical process designed to increase the corrosion resistance of parts. Parts are placed in the tank solution and submerged in a nitric acid bath. A hard non-reactive surface film that inhibits further corrosion forms on the surface. Sodium dichromate can be a constituent in the tank.
- *Stripping Tanks*
  Parts may have an existing layer of chrome coating on them that must be stripped prior to plating. The stripping process may either use a chemical process or use an electrical current to remove the layer. The concentration of hexavalent chromium in stripping tanks can vary by facility. These tanks are often electrolytic as well.
- *Chromate Conversion Tanks*
  Chromate conversion tanks are also referred to as “chem film” tanks. The conversion process converts the surface properties of the substrate by applying a thin protective coating utilizing bath chemistry rather than an electrolytic process.

Rinse Process

Counter-flow Rinsing

Counter-flow rinsing is the process of utilizing multiple rinse tanks connected in series. Fresh water flows into the rinse tank located furthest from the process tank and overflows, in turn, to the rinse tanks closer to the process tank. This technique is called counter-flow rinsing because the work piece and the rinse water move in opposite directions. Over time, the first rinse becomes contaminated with drag-out. The second rinse tank has an even lower concentration of hexavalent chromium compared to the first rinse tank. The more counter-flow rinse tanks, the lower the water flow needed for adequate removal of the process solution.

Spray Rinsing

Spray rinsing is the use of spray nozzles to rinse parts over process tanks or in a tank. Spray rinsing can significantly decrease drag-out, however, too high a water pressure can cause water that is laden with hexavalent chromium to ricochet off the parts. Hexavalent chromium-laden water that dries on surfaces has the potential to become fugitive emissions. Some facilities use a variety of techniques to contain the hexavalent chromium-laden water spray, such as spray rinsing in a tank or using barriers to contain the spraying operation.

Waste Processing

During hexavalent chromium electroplating or chromic acid anodizing, some portion of the materials used in production is not totally captured as product and can exit the process in wastewater and solid waste. Solids in the plating solution are precipitated out with the addition of chemicals. Further, a multi-stage clarifying system can be used so that a large portion can settle to the bottom as sludge. The sludge is a very wet metal hydroxide mixture that is removed from the treatment tank and can be "dewatered" in filter presses, leaving a wet mud that is generally 25 percent solids by weight. The sludge can be further dried to further reduce moisture content and weight by using a heated dryer. The sludge is stored in containers, such as "super sacks" or larger "roll off boxes," and sent to facilities that are permitted to process hazardous waste.

A difference between hexavalent chromium facilities and other metal plating facilities is the practice to reduce hexavalent chromium to trivalent chromium if the facility processes wastewater on-site. This process is conducted prior to precipitation of solids. A reducing agent, such as sodium bisulfite, is added and reduces hexavalent chromium to trivalent chromium. The hexavalent chromium to trivalent chromium reduction reaction yield is not 100 percent. Hexavalent chromium electroplating and chromic acid anodizing facilities identify the sludge as regulated solid waste F006 and F007 under 40 CFR Section 261.31.

SCAQMD SAMPLING OF HEXAVALENT CHROMIUM IN TANKS

To better identify the potential sources of elevated concentrations of hexavalent chromium, SCAQMD staff conducted hexavalent chromium emission and fluid sampling at various tanks that could potentially be sources of hexavalent chromium emissions. Tables 1-5 through 1-9 summarize the results.

Table 1-5: Results of Sealing Tanks Sampling

Tank Type	Facility	Hexavalent Chromium Content (ppm)	Tank Operating Temperature (°F)	Air Sparging	Surface Area (ft^2)
Sodium Dichromate[1]	Facility B	80,400	200	No	12
Sodium Dichromate	Facility C[3]	Not Recorded	Not Measured	No	12
Sodium Dichromate	Facility E[3]	53,000[2]	203	No	12
Sodium Dichromate	Facility D	32,000	194-212	No	32
Sodium Dichromate	Facility B	24,200	200	No	12
Sodium Dichromate	Facility A	17,000	196	Yes	30
Dilute Chromate	Facility A	100	203	Not Recorded	30
Teflon	Facility C	5	Not Measured	Not Recorded	4.5
Hot Deionized (DI) Water	Facility C	<1	Heated (assumed)	Not Recorded	Not Recorded
Nickel Acetate	Facility B	<1	Heated	Not Recorded	12
Nickel Acetate	Facility C	<1	Not Measured	Not Recorded	11
Nickel Acetate	Facility A	<1	170	Not Recorded	30
Nickel Acetate	Facility F	ND[4]	Heated	Not Recorded	8

[1] Dow #7 (Type III) – used in magnesium anodizing process lines

[2] Highest value taken of a triplicate run

[3] Hexavalent chromium air concentration measurement

[4] Not Detectable

Table 1-6: Results of Chromate Conversion and Dye Tanks Sampling

Tank Type	Facility	Hexavalent Chromium Content (ppm)	Tank Operating Temperature (°F)	Air Sparging	Surface Area (ft^2)
Chem Film	Facility G	2880	Ambient	No	3.75
Chem Film	Facility C	4	Not Measured	Not Recorded	Not Recorded
Chromate Film	Facility D[1]	Not Measured	Ambient	Yes	32
Alodine Clear	Facility F	300	Ambient	Not Recorded	8
Gold Dye	Facility C	8	Not Measured	Not Recorded	Not Recorded
Blue Dye	Facility C	2	Not Measured	Not Recorded	Not Recorded
Black Dye	Facility C	<1	Not Measured	Not Recorded	Not Recorded
Red Dye	Facility C	<1	Not Measured	Not Recorded	Not Recorded
Green Dye	Facility C	<1	Not Measured	Not Recorded	Not Recorded
Heated Dye	Facility F	ND[2]	Heated	Not Recorded	8

1 Hexavalent chromium air concentration measurement

2 Not Detectable

Table 1-7: Results of Rinse, Cleaner, and Desmutt Tanks Sampling

Tank Type	Facility	Hexavalent Chromium Content (ppm)	Tank Operating Temperature (°F)	Air Sparging	Electrolytic	Surface Area (ft^2)
Rinse	Facility G	23,200	Heated	No	No	24
Rinse	Facility C	4	Not Measured	Not Recorded	No	Not Recorded
Rinse	Facility D	2	Not Measured	Not Recorded	No	Not Recorded
Rinse	Facility F	<1	Not Measured	Not Recorded	No	Not Recorded
Rinse	Facility C	<1	Not Measured	Not Recorded	No	Not Recorded
DI Rinse	Facility C	<1	Heated	Not Recorded	No	8
DI Rinse	Facility C	2,300	Not Measured	Not Recorded	No	Not Recorded
DI Rinse	Facility C	19	Not Measured	Yes	No	9
Cleaner	Facility C	10	Not Measured	Not Recorded	No	29
Cleaner	Facility H	6	Heated	Not Specified	Yes	24
Desmutt	Facility C	0	Not Measured	Not Recorded	No	3

Table 1-8: Results of Passivation, Etch, Neutralizer, and Stripping Tanks Sampling

Tank Type	Facility	Hexavalent Chromium Content (ppm)	Tank Operating Temperature (°F)	Air Sparging	Electrolytic	Surface Area (ft^2)
Chrome Stripping	Facility I	47,400	Not Measured	No	Yes	64
Chrome Stripping	Facility I	37,000	Not Measured	Not Recorded	Yes	42
Chrome Stripping	Facility M	2,300	Not Measured	Not Recorded	Yes	7.5
Passivate	Facility F	10,100	Heated	No	No	8
Passivate	Facility L	7,200	Not Measured	Not Recorded	No	Not Recorded
Passivate	Facility L	ND[1]	Not Measured	Not Recorded	No	Not Recorded
Passivate Rinse	Facility G	210	Not Measured	Yes	No	9
Etch Tank	Facility C	9	Not Measured	Not Recorded	Not Recorded	29
Acid Neutralizer	Facility C	<1	Not Measured	Not Recorded	Not Recorded	6

[1] Not Detectable

Table 1-9: Results for Electrolytic Tier III Tank

Facility	Electrolytic Tank Type	Hexavalent Chromium Results (ppm)	Solution Type
Decorative 1	Stripping	100	Acidic
Hard 1	Stripping	64,000	Caustic
Decorative 2	Stripping	7,000	Caustic
Decorative 3	Stripping	1	Acidic
Decorative 4	Stripping	110	Caustic
Hard 2	Stripping	33,000	Caustic
Decorative 5	Electropolishing	3,000	Caustic
Decorative 6	Electropolishing	860	Caustic
Hard 3	Stripping	37,000/76,000	Caustic
Decorative 7	Electropolishing	3,200	Caustic

Emissions are a greater concern for those tanks that are heated, air sparged or electrolytic as explained earlier in this chapter. High concentrations of hexavalent chromium were found in sodium dichromate seal tanks, electrolytic chrome stripping tanks, electropolishing tanks, passivation tanks, and some rinse tanks. Depending on the design of the facility, rinse waters can have a large variability of hexavalent chromium concentrations. Another factor that contributes to the hexavalent chromium concentration is the frequency of rinse water change-out for the respective tank. Chem film tanks, dye tanks, and most tanks used in the cleaning process (i.e. several rinse tanks, and cleaner and desmutt tanks) were generally found to have low hexavalent chromium concentrations. Chromate conversion and dye operations are chemical processes that have specific concentrations of hexavalent chromium that are dependent on the required specifications of the bath. Sampling results showed a large variation of hexavalent chromium between various "chem films," but typically a low concentration of hexavalent chromium in dye operations.

Additional sampling was conducted to define the relationship between temperature and tank concentration of hexavalent chromium to the level of hexavalent chromium emissions. SCAQMD staff conducted sampling at different temperature ranges with similar concentrations of hexavalent chromium and the results are shown in Table 1-9 above.

Table 1-10: Results of Sampling of Tanks at Various Temperatures

Tank Type	Tank Hexavalent Chromium Content (ppm)	Tank Operating Temperature (°F)	Run	Tank Hexavalent Chromium Emission Concentration (ng/m^3)	Tank Hexavalent Chromium Emission Rate (mg/hr)	Tank Hexavalent Chromium Emission Rate per Ft^2 ($mg/hr\text{-}ft^2$)
Alodine Tank	347	150	1	37.9	0.037	3.75E-3
			2	25.7	0.025	2.53E-3
			3	58.8	0.054	5.40E-3
			AVG	40.8	0.039	3.89E-4
Alodine Tank	333	160	1	72.7	0.083	8.33E-3
			2	51.3	0.058	5.80E-3
			3	134.9	0.156	1.56E-2
			AVG	86.3	0.099	9.92E-3

SCAQMD staff utilized emission factors to determine what tank concentrations would exceed 0.20 mg/hr. At 150° F, 0.20 mg/hr would be exceeded when tank hexavalent chromium concentrations exceed 1,780 ppm. At 160° F, 0.20 mg/hr would be exceeded when tank hexavalent chromium concentrations exceed 673 ppm. Tanks that operate below 140° F that are not electrolytic nor utilize air sparging would likely not be a source of hexavalent chromium emissions, regardless of the hexavalent chromium concentration in the tank. SCAQMD staff developed a temperature range with corresponding maximum hexavalent chromium concentration for operation of tanks, so that when it was operated it would emit less than 0.20 mg/hr. Figure 1-2 shows steam rising from a heated tank.

Figure 1-2: Photograph Taken During Tank Testing

Table 1-11: Operating Conditions Resulting in Hexavalent Chromium Emissions $\geq$ 0.20 mg/hr

Temperature of Tank	Maximum Hexavalent Chromium Concentration in Tank
140-150°F	1,500 PPM
150-160°F	500 PPM
>160°F	100 PPM

Industry stakeholders requested a more comprehensive chart by using a curve or formula that would fill in the gaps between specific data points to more finely define operating conditions. Industry stakeholders also commented that add-on controls are expensive for tanks that narrowly meet the definition of a Tier II Hexavalent Chromium Tank and emit at a low uncontrolled emission rate.

SCAQMD staff revised the approach for the tiered tanks by adding an intermediate tier. The uncontrolled emission rate for the intermediate tier is 0.20-0.40 mg/hr. The intermediate tier would not require the use of add-on air pollution controls, but would require the use of other low-cost air pollution control techniques, such as mechanical fume suppressants and tank covers, that would reduce hexavalent chromium emissions to below 0.20 mg/hr. During the permitting process, SCAQMD staff currently uses an emission reduction factor of 0.50 for tank covers and 0.70 for mechanical fume suppressants.

SCAQMD staff used emissions data from source testing of multiple tanks at various hexavalent chromium concentrations and bath temperatures to generate a formula that was then used to develop a table that identified concentration and operating temperature ranges that would result in an uncontrolled emission rate of 0.20-0.40 mg/hr. Staff developed the following two equations based on an uncontrolled emission rate range of 0.20-0.40 mg/hr to define Tier II and Tier III Tanks when considering specific operating temperatures.

$$\text{Lower Concentration Limit (ppm)} = 1.92 * 1042 * [\text{Operating Temp °F}]^{-17.92} – 105.9$$

$$\text{Upper Concentration Limit (ppm)} = 2 * (1.92 * 1042 * [\text{Operating Temp °F}]^{-17.92} – 105.9)$$

Temperature and hexavalent chromium concentrations were developed for temperatures between 140-170° F in increments that would define Tier II and Tier III Tanks.

Table 1-12: Tier II and Tier III Tank Concentration and Temperature Thresholds

Temperature (° F)	Tier II Tank Concentration (ppm)	Tier III Tank Concentration (ppm)
140 to <145° F	5,200 to <10,400	≥10,400
145 to <150° F	2,700 to <5,500	≥5,500
150 to <155° F	1,400 to <2,900	≥2,900
155 to <160° F	700 to <1,600	≥1,600
160 to <165° F	400 to <800	≥800
165 to <170° F	180 to <400	≥400
≥170° F	≥100 to <200	≥200

Tier I, Tier II, and Tier III Tanks were divided into the corresponding categories as shown in Figure 1-3.

Figure 1-3: Categorization of Tier I, Tier II, and Tier III Hexavalent Chromium Tanks

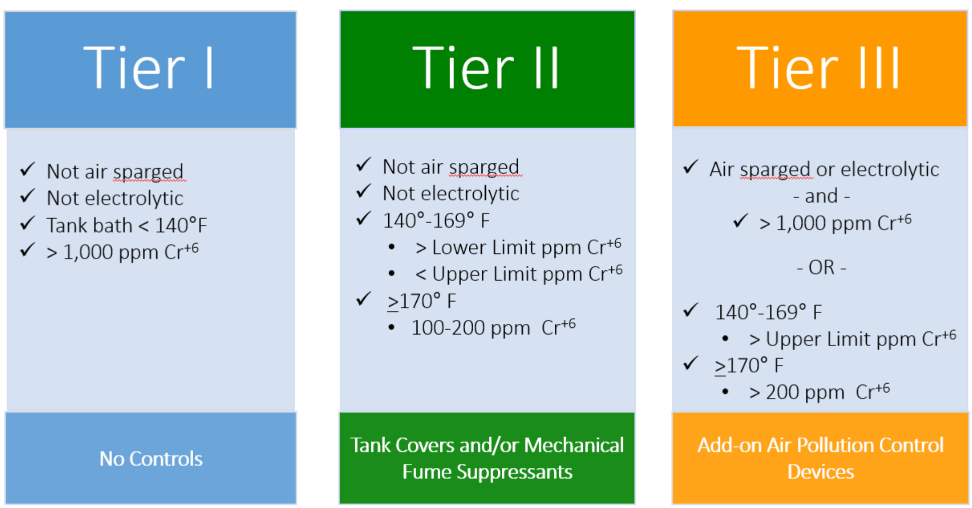
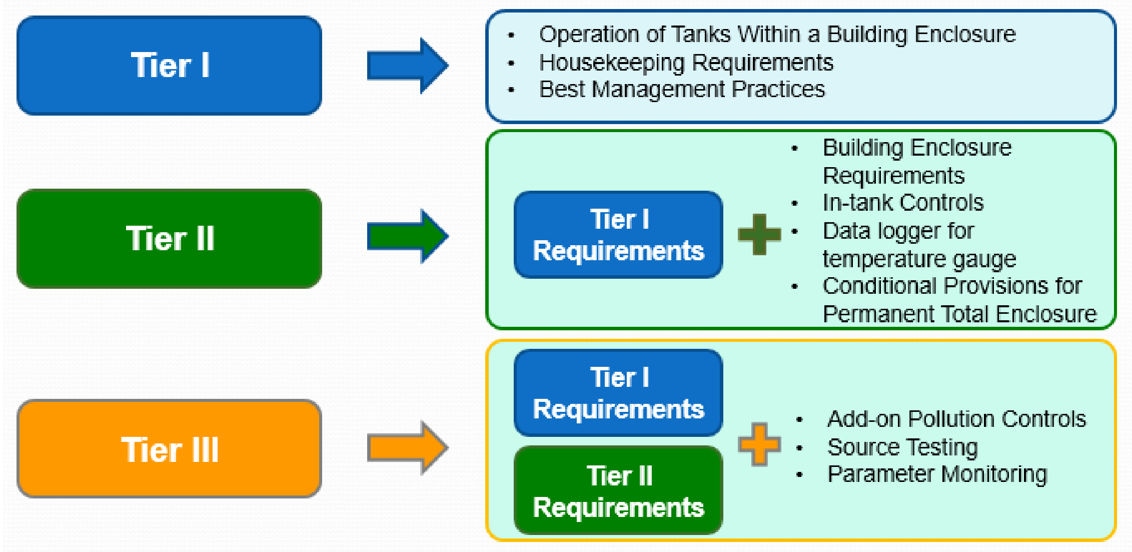


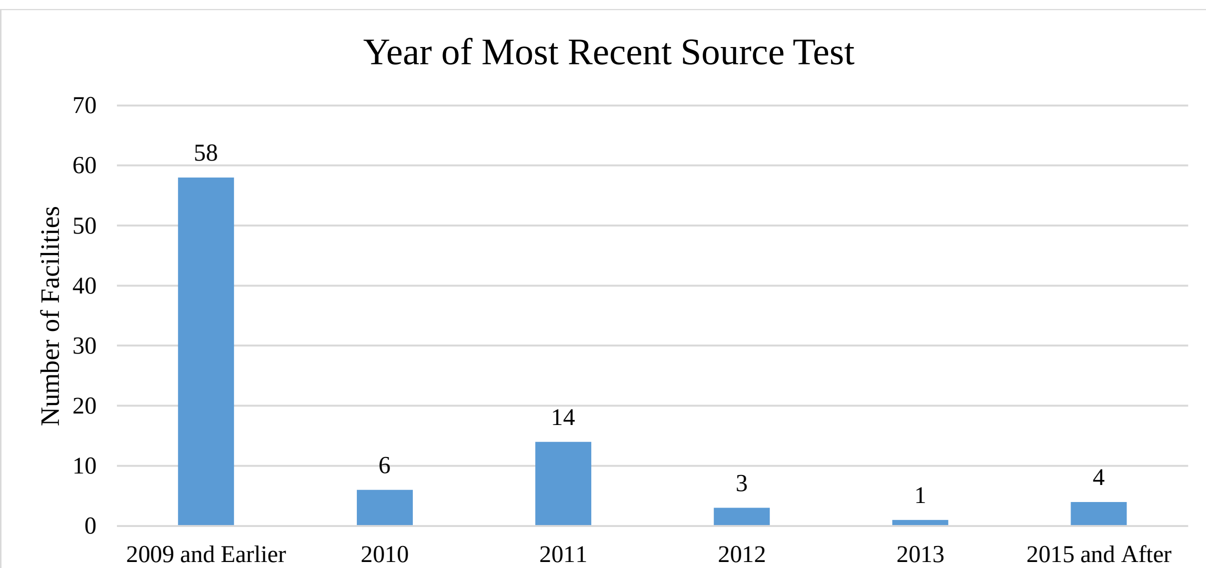
Figure 1-4: Differences between Tier I, Tier II, and Tier III Hexavalent Chromium Tanks



SUMMARY OF SOURCE TEST RESULTS FOR PLATING AND ANODIZING TANKS

Rule 1469 requires owners or operators to comply with emission rate standards that are demonstrated to be achieved through either in-tank controls, add-on controls, or a combination of methods. Facilities required to achieve the 0.01 mg/amp-hr emission rate may use a certified chemical fume suppressant which has been certified to meet the emission rate at specific surface tension. Facilities required to achieve a more stringent emission rate must verify the performance of control methods or add-on controls through a source test. Rule 1469 currently does not require periodic source testing.

Figure 1-5: Distribution of Most Recent Source Tests



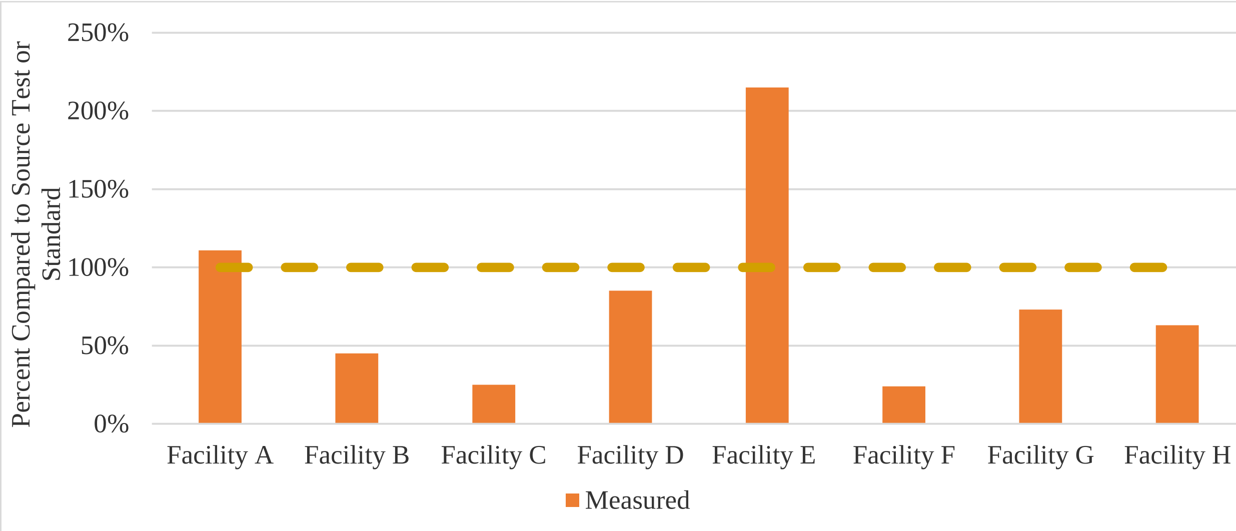
A majority of facilities conducted a source test more than eight years ago. Only four facilities conducted a source test within the last three years and no source tests were conducted in 2014. Periodic source tests are necessary to confirm that the facility's control method or add-on controls are providing sufficient capture and control of hexavalent chromium emissions at a specific emission rate. The source tested emission rate is used to determine an appropriate ampere-hour limit during the permitting process. If a facility operates at a higher emission rate than what was permitted, the hexavalent chromium emissions that would be emitted by the facility would be higher than what was expected.

Slot Velocity Measurements

Under Rule 1469, add-on air pollution control devices are one method of capturing and controlling hexavalent chromium emissions from electrolytic tanks. Hexavalent chromium emissions are captured via a ventilation system that is dependent on a specified velocity of air to ensure sufficient capture efficiency. Rule 1469 requires a periodic qualitative assessment of the performance of add-on air pollution control devices by conducting a smoke test. The smoke test verifies that emissions are moving directly towards the collection device and are not meandering around or moving away from the collection device. However, there is currently no requirement to quantify the slot velocities of the capture system. Recent source tests of add-on air pollution control devices specifies each individual slot velocity at the time of the source test. However, many older tests do not have a listed capture slot velocity. SCAQMD staff was concerned that slot velocity would degrade over time due to lack of maintenance of the ventilation system and build-up of material in and around the slots leading to the ventilation system. Then the captured amount of hexavalent chromium would be significantly less than 100 percent. If the capture efficiency is not sufficient, hexavalent chromium emissions will not be directed to the pollution control device and will be fugitive.

SCAQMD staff conducted site visits at eight metal finishing facilities and measured the slot velocity of add-on controls using a hot wire anemometer. Generally a minimum slot velocity of 2,000 feet per minute for open tanks and 200 feet per minute for covered tanks is recommended per the *Industrial Ventilation Manual 28th Edition*. The measured slot velocities were generally lower than either the source tests (if available) or the corresponding recommended minimum slot velocities.

Figure 1-6: Slot Velocity Measurements of Emission Collection Systems at Multiple Facilities



Facility E was found to be conducting monthly inspections of the control equipment by performing periodic cleaning of slots of the collection systems, replacing equipment parts of air pollution systems to optimize operation, and utilizing third-party contractors to conduct periodic smoke tests. Owner or operators at facilities with deficient slot velocities conducted infrequent measurement of slot velocities or no measurement of the slot velocities. Requirements to have an owner or operator of facilities periodically measure slot velocities would serve as an additional method to ensure that hexavalent chromium emissions are being collected and directed to the pollution controls.

SITE VISITS

As part of PAR 1469 development, SCAQMD staff conducted site visits at 47 facilities that either conduct chromic acid anodizing or hexavalent chromium electroplating. Beginning in 2015 and continuing into 2018, SCAQMD rules staff performed pre-arranged site visits at these facilities. The site visits focused on housekeeping, emission control methods at electroplating and anodizing tanks, conditions of buildings containing process tanks, grinding operations, and potential facility response to the prohibition of chemical fume suppressants that facilities were utilizing as in-tank controls to prevent hexavalent chromium emissions.

Housekeeping Observations

Rule 1469 has specific conditions intended to prevent the generation of fugitive emissions of hexavalent chromium. These fugitive emissions may be generated due to atomization of chromium-laden liquid, contamination, or uncontained chromium-laden liquid being dried. SCAQMD staff observed the following practices that can lead to fugitive emissions of hexavalent chromium.

Rinsing of Parts

Prior to proceeding to the next tank in the process line, chrome-laden liquid that is adhering to a part or equipment is removed. The owner or operator may utilize a water spray rinse to remove the chrome-laden liquid. SCAQMD staff observed facilities spraying parts above a tank with the rinse water being uncontained. In certain circumstances, a splash guard was utilized to prevent overspray and the splash guard had holes or could be influenced by cross-draft. Also, facilities used high pressure sprays that resulted in water ricocheting off parts potentially spreading hexavalent chromium-laden liquid beyond the confines of the splash guard and tank.

Drag-Out

When parts are removed from the tank, chrome-laden liquid adheres to the part. More liquid can adhere to the part if the part is pulled up quickly creating a situation where liquid is dragged out from the tank. In some situations, the drag-out liquid is not caught nor contained and lands on the floor. In other situations, owners or operators were observed to utilize drip trays between tanks or other methods to prevent chrome-laden liquid from landing on the floor.

Location of Roof Vents

Roof vents of the building were located above the tank process area. The roof vents function as exhaust fans for the building that pulls air from the building into the atmosphere. Depending on the proximity of the tank and the contents and other parameters of the tank such as temperature and mixing technique, emissions from the tank can escape, uncontrolled, through the roof vents out to the atmosphere.

Flooring Materials That are Difficult to Maintain

Most facilities used either a metal grate or wood planks around tank processing areas. SCAQMD staff observed at one facility, however, that the flooring was constructed out of carpet that could trap chrome-laden liquid. This carpet material would be difficult to clean and would be a potential source of fugitive hexavalent chromium emissions if disturbed and could be tracked out of the building.

Waste Processing Area
Some chromium electroplating or anodizing facilities process waste generated from the tank process. This involves treating wastewater such as reducing hexavalent chromium into trivalent chromium. Suspended solids get separated out from solutions and can be processed in a filter press. The processed solids are known as sludge and treated as waste. SCAQMD staff observed some facilities with process sludge in open containers and dust was observed in the waste processing area.

NEED FOR PROPOSED AMENDMENTS TO RULE 1469

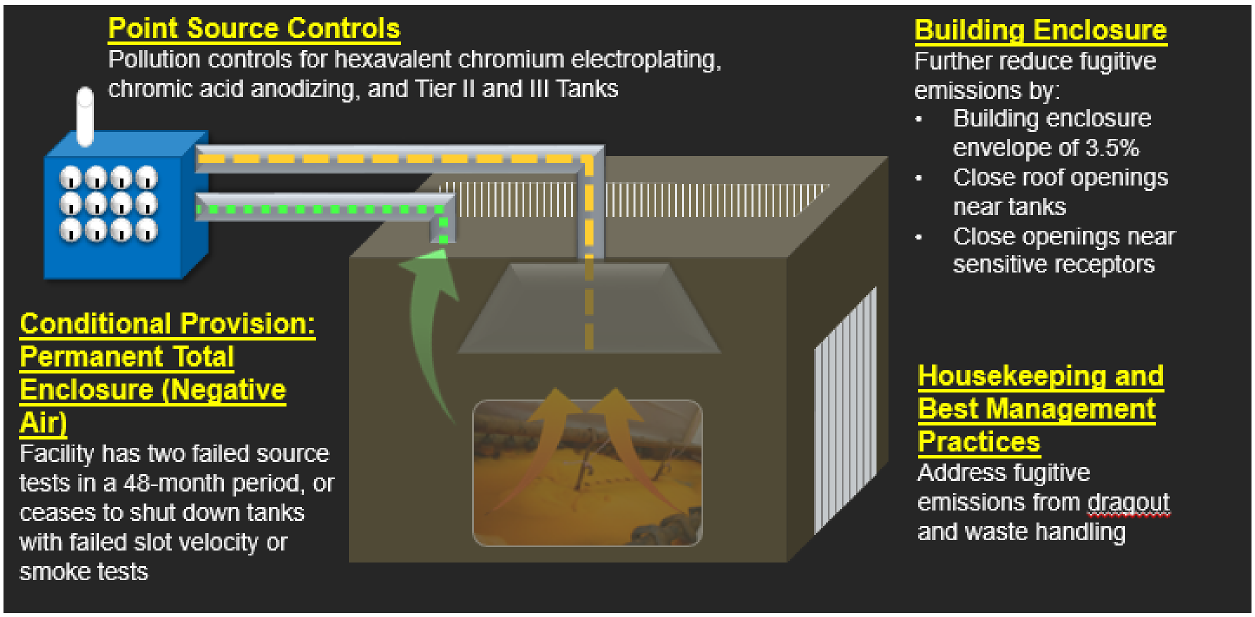
As previously discussed, ambient monitoring and sampling at metal finishing facilities in Newport Beach, Paramount, and Long Beach have shown elevated levels of hexavalent chromium. These levels were attributed to cross-drafts that allowed hexavalent chromium emissions to escape outside of the building enclosure and hexavalent chromium emitting tanks that are currently not regulated under Rule 1469. Based on ambient monitoring data in Paramount, hexavalent chromium emissions were reduced by more than 75 percent after operators closed a door near the chromic acid anodizing and heated sodium dichromate tank that eliminated a cross-draft in the building opening that allowed emissions to exit the building. This demonstrated the need for certain operating parameters for building enclosures. In addition, emissions testing has shown that certain tanks, such as heated sodium dichromate seal tanks as well as other tanks with specific operating temperatures and hexavalent chromium concentrations that are currently not regulated under Rule 1469 can be a significant source of hexavalent chromium emissions potentially impacting off-site receptors. This demonstrated the need for pollution controls for these tanks and other tanks with similar operating characteristics.

PAR 1469 is needed to address issues found during ambient monitoring and emissions sampling and testing at Rule 1469 facilities in Newport Beach, Paramount, and Long Beach. Based on staff's observations during site visits, the emissions issues identified at these facilities are not unique to their operations and occur at other Rule 1469 facilities that have similar tanks with similar operating characteristics, such as tanks with high concentrations of hexavalent chromium, elevated temperatures, air sparging, or that are rectified.

PAR 1469 is also needed to establish requirements that minimize the release of fugitive hexavalent chromium emissions from buildings. Sources of fugitive hexavalent chromium emissions from Rule 1469 facilities include building cross-drafts and fans and vents that are open to the outside air located above uncontrolled hexavalent chromium emitting tanks. Sampling in roof vents at a facility in Newport Beach and Paramount showed that hexavalent chromium emissions do escape from roof vents. As a result, provisions to minimize roof openings within a specified distance of a Tier II or III Tank are included in PAR 1469. During the rulemaking process, staff took into consideration the affected sources and their concerns. One overarching concern expressed from the Metal Finishing Association was that a number of PAR 1469 facilities are small businesses and their ability to comply with more rigorous requirements such as a permanent total enclosure under negative air vented to air pollution controls. PAR 1469 provides a balance. It provides public health protection, but has triggers for additional provisions such as a permanent total enclosure for facilities that have consistently shown they cannot meet the point source emission requirement or fail to adhere to requirements to shut down a tank that fails specific parameter monitoring provisions.

In addition to issues identified through monitoring and sampling, staff identified other Rule 1469 amendments that are needed to minimize fugitive hexavalent chromium emissions. Provisions are needed to ensure ongoing compliance with emission limitation requirements. Currently, Rule 1469 requires a one-time source test of pollution control equipment to confirm compliance with the emission limit. Amended source testing provisions ensure that the pollution controls are operating properly and identify any degradation of the efficacy of the pollution controls that may occur over time. Provisions are also needed to ensure that pollution controls are operating on a continuous basis. PAR 1469 will incorporate provisions to conduct parameter monitoring such as slot velocities measurements on an ongoing basis to ensure ventilation to the pollution controls is operating properly on a continual basis. Figure 1-7 provides a summary of the approach used in the development of PAR 1469.

Figure 1-7: PAR 1469 Approach



PAR 1469 is needed to establish basic best management practices. These relatively low-cost practices will help minimize fugitive hexavalent chromium emissions through the reduction of overspray of hexavalent chromium-laden liquid and reduction of drag-out from parts. Amendments to Rule 1469 are also needed to ensure Rule 1469 is equally as stringent as the recent changes to the federal NESHAP.

Overview of PAR 1469

PAR 1469 seeks to regulate all tanks in hexavalent chromium electroplating and anodizing operations with hexavalent chromium concentrations of 1,000 ppm or greater. The proposed amendments will create three tiers of tanks:

- A Tier I Hexavalent Chromium Tank means a tank permitted to contain a hexavalent chromium concentration of 1,000 ppm or greater and is not a Tier II or Tier III Hexavalent Chromium Tank
- A Tier II Hexavalent Chromium Tank means a tank permitted or operated above 140° that operates within the corresponding hexavalent concentration
- A Tier III Hexavalent Chromium Tank means a tank that is permitted to contain a hexavalent chromium concentration greater than 1,000 ppm, and uses air sparging as an agitation method or is electrolytic. Also, a tank is considered a Tier III Tank if the tank is permitted or operated above 140° and above a corresponding hexavalent chromium concentration.

Tier I, Tier II, and Tier III Tanks will be required to be operated in a building enclosure, and comply with housekeeping requirements and best management practices to minimize fugitive chrome emissions. Tier II and III Tanks will be required to operate with specific building enclosure requirements to minimize fugitive emissions released. Additionally, Tier III Tanks, which have been found to have higher emissions, will be required to be vented to add-on air pollution control devices. Hexavalent chromium tanks that are air sparged or are electrolytic are well-known to generate hexavalent chromium emissions, as discussed in the Process Description section, above. Additionally, staff's emissions sampling found that hexavalent chromium tanks that operate at and above 170°F have significantly higher emissions than tanks operating at or below 140°F. Additional testing demonstrated that there are significant hexavalent chromium emissions when the tank bath temperature became elevated even at concentrations below a Tier I Tank.

Other proposed rule changes include:

- More stringent housekeeping practices for all facilities;
- Revisions to existing housekeeping requirements;
- Increased monitoring and recordkeeping;
- Prescriptive requirements to reduce cross-draft in plating areas; and
- Removal of interim Rule 1469 conditions that are no longer applicable.

Amendments to Rule 1469 are also needed to address recent revisions to the federal NESHAP. The NESHAP incorporates a lower surface tension limit for chemical fume suppressants limit of 40 dynes/cm when using a stalagmometer, or 33 dynes/cm when using a tensiometer and bans the use of PFOS in chemical fume suppressants. Most of the other provisions of the NESHAP are already incorporated into existing Rule 1469. SCAQMD staff has determined that several elements of current Rule 1469 as it stands are equivalent or more stringent than the newly amended NESHAP. Therefore, PAR 1469 proposes incorporating elements of the newly amended federal NESHAP into Rule 1469, along with the addition of several new or more stringent requirements that address fugitive emissions and control recently identified point sources. Rule 1469 is also being amended to provide clarity.

CONTROL TECHNOLOGIES

Several types of controls are available for metal electroplating processes and are currently used for reducing emissions from electroplating operations. They are described below.

High-Efficiency Particulate Arrestors (HEPA)

Used in conjunction with a pre-filter, HEPA filters can trap toxic particles as small as 0.3 µm at an efficiency of 99.97 percent or greater. Like cartridge filters, HEPA filter elements are of pleated construction. HEPA filters are generally limited to ambient temperature (up to 100°F), though special applications for higher temperatures are available. Unlike bags or cartridge filters, HEPA filters are not automatically cleaned. When a HEPA filter element becomes loaded with particulate matter, the filter is replaced and disposed of as hazardous waste.

Emission Elimination Device (EED)

An EED encloses a process tank while chrome plating is being conducted. The EED incorporates a membrane that allows for free passage of gasses, while effectively blocking the escape of water vapor and chemical mist. The EED is a stand-alone, self-contained unit requiring no supplementary equipment or exhaust outside the facility. Control efficiency is reported to be 100 percent.

Gases generated during the chromium electroplating process escape through the membrane on the EED. Water vapor condenses on the inside walls and top of the enclosure. The condensate runs back into the plating solution. Chromium mist, being heaviest of all by-products and because of the absence of any significant air movement, rises to a limited height and then also falls back into the plating solution. The denser mist, caused by the presence of water vapor mist, further reduces upward mobility of the chromium mist particles. In addition, the water vapor mist and droplets of condensed water provide scrubbing of the air inside the EED.

An adapter is affixed to the top of the plating tank walls with appropriately placed and properly sealed openings for buss bar, plumbing, and electrical conduits, etc. A hinged hood, with counter weights or other mechanical means of openings, is then placed on top of the adapter. A deformable sealing gasket material (compatible with process chemicals) is placed between the tank wall and adapter as well as between the hood and the adapter. An evacuation process is also incorporated into the system as a means of removing any mists or fumes that remain under the hood after the plating process is completed.

Parts to be plated are placed on the buss bars. The contacts must be cleaned and secured to avoid any sparking during plating. After the cover is closed and secured, the rectifier is turned on and the interlocks automatically engage to secure the access door. Interlocks ensure that the door is not opened while plating is being conducted in the tank. When the rectifier is turned off, the evacuation unit automatically turns on and must be run for a specified period.

Mist Suppression at Tank Surface

Applicable to electroplating and anodizing, mist suppression at the surface of the electroplating or anodizing tank is a low-cost, zero-energy, first-step method of mitigating heavy metal (including hexavalent chromium) bearing aerosols before they become entrained in ventilation air and put an unnecessary load on downstream control. Mist suppression is accomplished by floating polyethylene balls covering the wet surface of an electroplating or anodizing tank. Tanks remain fully functional with respect to workpiece submergence and removal, and the aerosol generation is reduced by 50 to 80 percent. Since aerosols are prevented from leaving the tank surface, there is no waste stream associated with this technology.

Wet Packed-Bed Scrubber

Wet packed-bed scrubbers consist of a vertical column made of fiberglass or other non-corrosive material loosely filled with specially shaped plastic packing material which maximizes gas-to-liquid contact and minimizes pressure drop across the column. Exhaust air from an electroplating or anodizing tank line enters at the bottom of the scrubber and exits at the top. The scrubbing solution is pumped from a reservoir at the base of the scrubber and sprayed down into the packing from the top. This flow scheme is called counter-current scrubbing and is the dominant method in use today due to its high pollutant removal efficiency, ranging from 90 to 98 percent, depending on residence (contact) time and solution freshness.

Chevron Mist Eliminators

This air pollution control device is available in different functional designs, the most common being a chevron-shaped baffle pattern which forces mist-laden air to make several abrupt changes in direction between the entry and exit points of the baffle material. Since mist droplets are much heavier than air molecules, they have too much linear momentum to make sharp turns without impacting the baffles. Since many mist droplets strike the baffles, a liquid film forms, causing large droplets to coalesce and drop back down into the piece of equipment being controlled. Mist eliminators are used at the exhaust points of tank vents and wet packed scrubbers to reduce emissions of aerosols and to conserve process and scrubbing solutions, respectively. Since the liquid droplets formed by mist eliminators return to the controlled device, there are no waste streams resulting from their application.

Mesh Pad Mist Eliminators

Mesh pad mist eliminators are used to recover electroplating chemicals of chromium electroplating and chromic acid anodizing. For caustic baths, mesh pads are used to prevent corrosion of the ventilation system. They are also used in scrubber systems for primary removal of particles. However, in this application, multiple exhaust streams are typically combined in a single mist eliminator, thus removing the possibility of chemical recovery.

Mesh pads are considered more efficient than liquid scrubbers. They use smaller amounts of water, making chemical recovery feasible. In a typical arrangement, a mesh pad mist eliminator serves a single electroplating tank and is installed in the ventilation system. The cross sectional area of the exhaust duct is increased by the unit, reducing the velocity of the exhaust stream and allowing electroplating solution to adhere to the mesh pads. Removal efficiency is increased by adding mesh pads. The pads are periodically washed down and the collected electroplating solution is returned to the electroplating bath.

Chemical Fume Suppressants in the Electroplating Industry

Background

Chromium electroplating and chromic acid anodizing generates a large amount of hydrogen and oxygen gas bubbles due to electrolysis. A mist is formed by the bubbles created during electrolysis rising up through the plating solution and bursting through the surface of the plating bath. High speed droplets are ejected from the surface of the solution. The resulting speed of a droplet can be up to 10 m/sec. Collectively, these droplets form a fume or mist. The mist contains chromic acid and provides a transport mechanism for potential emissions of hexavalent chromium.

There are several proven preventive measures that can be implemented to reduce emissions and exposure to hexavalent chromium emissions from plating and anodizing baths. One of these measures is to use a chemical fume suppressant. The most common chemical fume suppressants are surfactant in nature and work by reducing the surface tension of the solution. This has a two-fold effect on the generation of mist. First, reducing surface tension reduces the size of the gas bubbles generated during electrolysis. These smaller bubbles travel slower through the solution and contain less energy than bubbles generated in solutions without a surfactant. Second, the lower surface tension reduces the energy with which the resulting droplets are ejected above the surface of the plating solution. Together, these effects can reduce emissions from the droplets, and therefore mist generation by a large percentage; estimates range from 90% to over 99%. The resultant exposure to emissions of hexavalent chromium is reduced in proportion.

Due to the aggressive chemical and electrochemical environment of chromium plating solutions, most mist suppressants are made from highly stable substances. Early chemical fume suppressants were of two types: wetting agent fume suppressants that reduce surface tension, and mist suppressants that formed foam blankets. Examples of wetting agent-type mist suppressants include Fumetrol 140, Benchbrite CR-1700 and CR-1800, DisMist NP, Clepo Chrome Mist Control and Macuplex STR.

Development of Wetting Agent Chemical Fume Suppressants

The intent of a wetting agent fume suppressant (WA/FS) is to reduce the surface tension of a liquid. When the surface tension is low, gases escape with reduced resistance leading to a diminished "bursting" effect, leading to reduced formation of mist. The most common types of WA/FS are fluorinated since fluorine adds stability throughout a wide range of operating conditions including temperature, electric current, chromic acid concentrations, and various chemical reactions.

The first generation WA/FS were hydrocarbon based. While they acted as surfactants, oils layered on the surface and carried over to rinse tanks, making it not as beneficial. Health, safety, and production issues associated with these WA/FS required the plating bath to be dumped more often.

The second generation WA/FS were fluorinated or perfluorinated carbon chains. These compounds were found to be stable in boiling temperatures, high concentrations of chromic acid, and near the highest oxidizing conditions existing at the anodes. However, the low solubility of the WA/FS caused production issues: roughness, porosity, and cracking on the chromium plate during hard chrome plating.

The third generation WA/FS were also perfluorinated, but with higher solubility and lower foaming. There appeared to be no adverse production impacts on the chromium plate during hard chrome plating.

Effectiveness of Third Generation Wetting Agent Fume Suppressants

In 2002, SCAQMD staff conducted a study to establish the performance of third generation WA/FS on the control of emissions of chromium with results published in Nickel and Chromium Emissions from Electroplating Tanks. In particular, staff correlated emissions with reduced surface tensions of the plating bath.

From the data and conclusions in the 2003 SCAQMD Staff Report for Proposed Amended Rule 1469, it is evident that third generation WA/FS are highly effective in reducing emissions from plating tanks. Data presented in the staff report showed that the observed emission reduction efficiencies ranged from 99.7% to 99.9% when compared with tanks operating without the use of chemical surfactants. These high levels of emission reduction efficiencies are achievable when the surface tension is reduced. WA/FS are one of the means of emissions control for many chromium plating tanks. For decorative and hard chrome plating tanks above a low production threshold, add-on controls, typically involving a scrubber, mesh pads and HEPA filters are also used as secondary controls. It is important to note that for tanks with add-on controls, use of WA/FS reduces inlet loading to the add-on control system by a factor of up to 100 times.

PFOS Fume Suppressants

As described in the U.S. EPA's publication Hard Chrome Fume Suppressants and Control Technologies, prior to 2015, PFOS was commonly used as a surfactant in widely-used mist suppressant products. PFOS is highly resistant to chemical attack and is well suited for use in harsh environments like hot chromic acid plating baths. However, the extremely robust nature of PFOS also means that it is not easily biodegraded or waste-treated and can be released into the environment where it can persist.

The U.S. EPA has expressed concerns about per- and polyfluoroalkyl substances (PFAS) due to toxicity and bioaccumulation. PFAS are a group of man-made chemicals that includes PFOA, PFOS, GenX, and many other chemicals. PFOA and PFOS have been the most extensively produced and studied of these chemicals. There is evidence that exposure to PFAS can lead to adverse human health effects. PFOS has been classified as persistent, bioaccumulative and toxic.

In response to these concerns, the U.S. EPA has taken a number of regulatory actions to address PFAS substances in manufacturing and consumer products. One of these actions included amending the Chrome Plating NESHAP. On September 19, 2012, the U.S. EPA published final amendments to the Chrome Plating NESHAP. As part of those amendments, effective September 21, 2015, U.S. EPA phased out the use of PFOS in fume suppressants.

On September 21, 2015, CARB and SCAQMD granted California chrome plating facilities a one-year extension from the PFOS ban, due to the lack of alternatives in the marketplace. The additional year allowed for a smooth transition toward the use of non-PFOS fume suppressants while maintaining public health protection from hexavalent chromium emissions. On September

21, 2016, all chromium plating facilities that used a WA/FS were required to use a product certified by the CARB that does not contain PFOS.

Development of Fourth Generation non-PFOS Fume Suppressants

As the phase-out of PFOS fume suppressants approached in 2015 and 2016, chemical fume suppressant manufacturers began development and testing of fourth generation, non-PFOS fume suppressants. These products were tested for certification by manufacturers, with assistance from CARB and SCAQMD at chrome plating facilities in several locations within California. Since September 2016, five non-PFOS fume suppressants were approved for specified chrome plate operations (three products for decorative operations and chromic acid anodizing, and two products for hard chrome plating). These currently certified non-PFOS fume suppressants, along with the surface tension certified for use are included in Table 1-7: Chemical Fume Suppressants Approved for Use at Specific Surface Tensions:

Table 1-12: Chemical Fume Suppressants Approved for Use at Specific Surface Tensions

Chemical Fume Suppressant and Manufacturer	Chrome Plating Applications	Stalagmometer Measured Surface Tension (dynes/centimeter)	Tensiometer Measured Surface Tension (dynes/centimeter)
Fumetrol 21 LF2 Atotech, U.S.A2	Hard plating	< 30	< 27
Dicolloy CRPF ProCom LLC2	Decorative plating and chromic acid anodizing	< 32	< 29
HCA - 8.4 Hunter Chemical LLC2	Decorative plating and chromic acid anodizing	< 25	< 22
HCA - 8.4 Hunter Chemical LLC2	Hard plating	< 33	< 30
Macuplex STR NPFX MacDermid Enthone Industrial Solutions2	Decorative plating and chromic acid anodizing	< 32	< 30

Toxicity Reviews by the California Office of Environmental Health Hazzard Assessment (OEHHA)

OEHHA conducted toxicity literature reviews of the ingredients in the currently certified non-PFOS fume suppressants, as follows:

1. Budroe, J. (2017, June 30). Toxicity of the Fume Suppressant Sodium Diamyl Sulfosuccinate [Letter to Robert Krieger].

2. Silva, R. M. (2015). *6:2 Flurotelomer Sulfonate (FTS/FTSA) and Perfluorohexanoic Acid (PFHxA) Toxicity Review* (Office of Environmental Health Hazard Assessment). Sacramento, CA: OEHHA.
3. Silva, R. M. (2016). *6:2 Fluorotelomer Alcohol (FTOH) Toxicity Review (Office of Environmental Health Hazard Assessment)*. Sacramento, CA: OEHHA.
4. Silva, R. M. (2015). *Summary of Reproductive and Developmental Effects of Perfluorohexane Solfonate (PFHxS)* (Office of Environmental Health Hazard Assessment). Sacramento, CA: OEHHA.

Reference Exposure Levels (RELs) are concentrations at or below which adverse health effects are not likely to occur in the general human population. Before RELs are officially adopted by OEHHA under the Hot Spots Program, they undergo internal peer review, one public comment period, two public workshops, and external peer review by the Scientific Review Panel on Toxic Air Contaminants. Interim RELs (iRELs) do not undergo the same comprehensive review process as OEHHA Hot Spots RELs.

Below is a brief summary of the toxicity reviews conducted by OEHHA.

Perfluorohexane Solfonate (PFHxS)
There was some evidence of reproductive toxicity, but insufficient evidence to be conclusive. The review was not exhaustive and more studies are needed to understand the effects. This was, in part, due to the fact that there was limited literature on toxicity available. OEHHA was not able to develop an iREL.

6:2 Fluorotelomer Sulfonate (FTS/FTSA) and Perfluorohexanoic Acid (PFHxA)
The exposure occurs via inhalation or ingestion. FTSA is biopersistent and does not degrade rapidly in soil or water. The evidence suggests relatively lower risk compared to PFOS and PFHxS. There is some evidence of reproductive toxicity, but insufficient evidence to be conclusive. OEHHA was not able to develop an iREL.

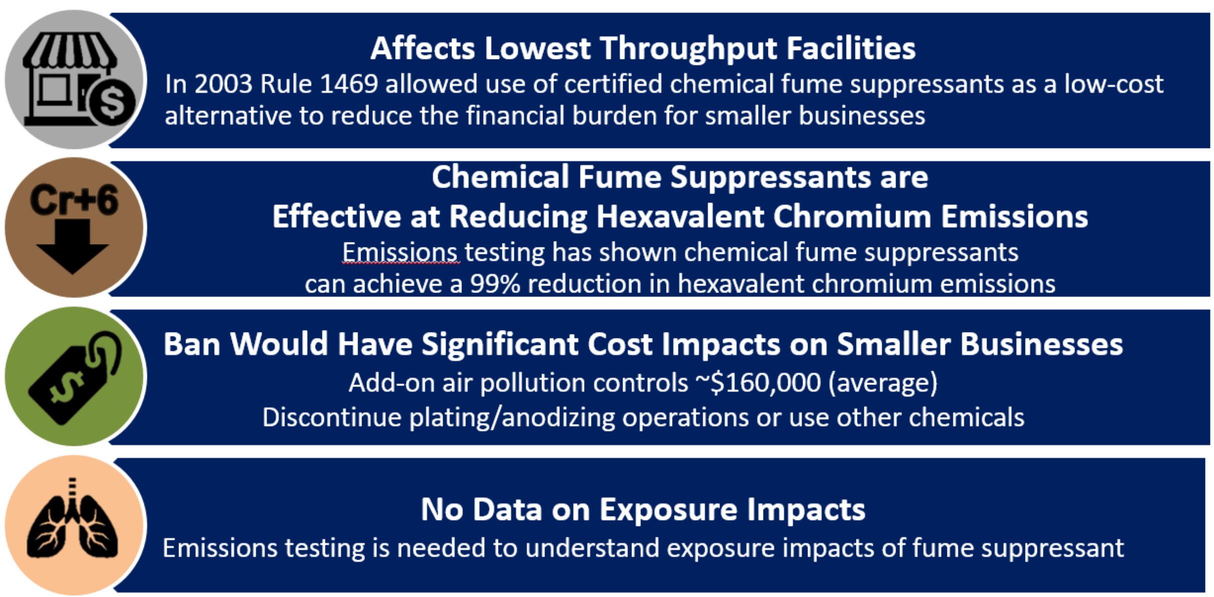
6:2 Fluorotelomer Alcohol (FTOH)
The exposure occurs via inhalation and exhibited rapid degradation with a half-life of less than two days in soil. The compound is capable of long distance atmospheric transport and surface contamination, producing potentially toxic responses based on animal studies. OEHHA was able to develop an iREL for Acute exposure: 20 ppb; 8-Hour exposure: 2 ppb; and Chronic 1 ppb exposure.

Sodium Diamyl Sulfosuccinate
There was insufficient information to make conclusions due to the limited literature on toxicity available. OEHHA was not able to develop an iREL.

Toxicity Concerns of Certified non-PFOS Chemical Fume Suppressants

Over the past several years there has been an increasing concern about PFAS, PFOA, and PFHxS chemicals. There have been numerous articles regarding the toxicity and the bio-accumulative health effects of these chemicals. Although most of the discussions have focused on ground water contamination and its use near manufacturing facilities and as a fire retardant, there is a growing concern about the health effects of the use of these materials in chemical fume suppressants used at metal finishing facilities. In May of 2018, the U.S. EPA held a National Leadership Summit in Washington D.C. to share information on the ongoing efforts to characterize the risks from PFAS and develop monitoring and treatment cleanup techniques. Although SCAQMD was not invited to participate in the Leadership Summit, staff will monitor the efforts on the national level and will be conducting additional emissions testing for chemical fume suppressants to better understand the amount of these chemicals that are released during the metal finishing process.

Chemical fume suppressants are able to reduce the surface tension and hexavalent chromium emissions from plating and anodizing tanks. Their effect reduces both inlet loading to air pollution control equipment and protects workers within plating and anodizing facilities from breathing mist containing hexavalent chromium, a known human carcinogen.



However, based on the conclusions from the toxicity reviews conducted by OEHHA, SCAQMD staff is looking further into additional measures to address the potential toxicity of these products while acknowledging the preliminary nature of the reviews. Other alternatives include using reformulated chemical fume suppressants that do not contain toxic compounds of concern, however, this is mainly dependent on the interest and willingness from manufacturers to develop and make these products available. Another option for facilities would be the installation of add-on air pollution control devices to reduce hexavalent chromium emissions. Staff recognizes that this may be a costly option for some smaller Rule 1469 facilities and is working with stakeholders to look at possible funding that can help sources to accelerate and incentivize the installation of add-on air pollution control devices and/or phase out hexavalent chromium from affected tanks.

Trivalent Chromium in Decorative Electroplating

An alternative to hexavalent chromium decorative electroplating that has existed since the 1970s is trivalent decorative electroplating. In the 2003 amendment to Rule 1469, staff discussed trivalent chromium decorative electroplating as a potential alternative to hexavalent chromium electroplating with the advantages and disadvantages summarized in the table below.

Table 1-13: Summary Table of Trivalent Chromium Electroplating

Advantage	Disadvantage
• Lower metal concentrations • No reduction step • Higher rack densities • Lower current density • Fewer rejects • Reduced drag-out • No fumes	• Differences in color • Higher cost • More careful control of plating conditions required • End product is darker and not as shiny

Staff visited two PAR 1469 facilities that do not conduct hexavalent chromium electroplating and utilize trivalent chromium electroplating. One facility electroplated clothing racks and the other facility electroplated furniture. Both facilities utilized a third-party company to periodically conduct an analysis of various bath constituents and advise them of necessary modifications to the bath. The third-party company measured concentrations of proprietary chemicals in the bath that included a chemical called a brightener and whitener. The facility representatives indicated that that the brightener and whitener allowed the finish to be closer to that of hexavalent chromium. However, both facility representatives expressed concern about the durability and resistance of the finish to outdoor elements. One facility representative indicated that trivalent chromium would develop pitting within six months and that previous chemistry produced a part that had a yellowish tinge compared to the blue tinge produced by hexavalent chromium. PAR 1469 has significantly fewer requirements for trivalent chromium electroplating compared to hexavalent chromium electroplating making the path to compliance more affordable. During, the development of PAR 1469, various stakeholders expressed a preference requiring facilities to use trivalent chromium instead of hexavalent chromium. To avoid a conflict with a federal requirement that requires the use of hexavalent chromium, a ban of the use of hexavalent chromium would need to occur at the federal level.

Figure 1-8: Photographs of Trivalent Chromium Electroplated Products

Staff contacted PAVCO, a distributor of a trivalent chromium that provided the following information:

There are two chemistries available for trivalent chromium electroplating: chloride electrolyte and sulfate electrolyte. The color scale for the sulfate electrolyte is closer to pure white and is used by most clients within SCAQMD's jurisdiction. While the color scale for sulfate electrolyte is the closes to hexavalent chromium, it is more sensitive to metallic contamination such as iron and nickel.

Table 1-14: PAVCO's Comparison of Trivalent Chromium and Hexavalent Chromium Electroplating

Advantages for Trivalent Chromium Electroplating	Advantages for Hexavalent Chromium Electroplating	Comparable Properties
• Lower current density needed • Can fit more parts on rack • Less treatment of wastewater needed • Lower scrap factor	• Plates faster • Better activation inside parts; passivate hard to reach areas • Color is more stable over time • Less expensive chemistry • Less attention to detail required	• Equivalent corrosion protection of plated surface based on Copper Activated Salt Spray (CASS) • Comparable cost when accounting for higher cost of trivalent chemistry vs. higher cost of control requirements and treatment of wastewater for hexavalent chromium

CHAPTER 2: SUMMARY OF PROPOSED AMENDED RULE 1469

PROPOSED AMENDMENTS TO RULE 1469

PROPOSED AMENDMENTS TO RULE 1469

Proposed amendments to Rule 1469 establishes additional requirements for facilities that conduct chromium electroplating or chromic acid anodizing. The intent of the rule is to further reduce hexavalent chromium emissions by addressing both fugitive emissions and point-source emissions. Fugitive hexavalent chromium emissions are addressed through additional housekeeping and maintenance activity requirements, and building enclosures of areas that may lead to hexavalent chromium emissions. New point-source controls are required for hexavalent chromium tanks that have been identified based on certain operating parameters to be sources of hexavalent chromium emissions. Facilities will also be required to conduct periodic source tests to verify that add-on air pollution control devices are performing as intended. This chapter outlines changes and additions made to the current version of Rule 1469 and is divided into sections as they appear in PAR 1469.

Purpose – Subdivision (a)

Consistent with other SCAQMD rules, a purpose provision was added to PAR 1469. The purpose of PAR 1469 is to reduce hexavalent chromium emissions from facilities that perform chromium electroplating or chromic acid anodizing operations, and other activities that are generally associated with chromium electroplating and chromic acid anodizing operations.

Applicability – Subdivision (b)

PAR 1469 applies to facilities that conduct chromium electroplating or chromic acid anodizing operations. PAR 1469 expands the applicability to other hexavalent chromium emitting process tanks that are associated with electroplating or chromic acid anodizing tanks.

PAR 1469 removes the language in this subdivision requiring compliance with SCAQMD Rule 1401 and Rule 1401.1. This language was deleted since PAR 1469 does not preclude compliance with SCAQMD Rule 1401 and Rule 1401.1. Similarly, the existing language transferred from the state's Chrome Plating ATCM regarding prohibitions on chromium electroplating and chromic acid anodizing kits have also been removed since Rule 1469 facilities are still subject to those requirements.

Definitions – Subdivision (c)

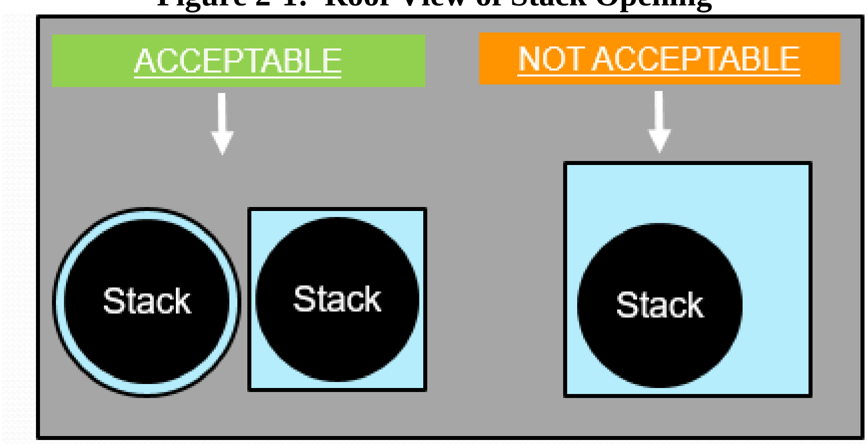
PAR 1469 modifies or adds the definitions of the following terms used in the proposed amendment. Please refer to PAR 1469 for actual definitions. Key changes are summarized below:

- ADD-ON AIR POLLUTION CONTROL DEVICE (modified)
- ADD-ON NON-VENTILATED AIR POLLUTION CONTROL DEVICE (added)
- AIR POLLUTION CONTROL TECHNIQUE (modified)
- APPROVED CLEANING METHOD (added)
- ASSOCIATED PROCESS TANK (added)
- BARRIER (added)
- BREAKDOWN (removed)
- BUILDING ENCLOSURE (added)
- ENCLOSURE OPENING (added)
- FUGITIVE EMISSIONS (modified)
- HIGH EFFICIENCY PARTICULATE ARRESTORS (HEPA) (modified)

- HEPA VACUUM (added)
- LOW PRESSURE SPRAY NOZZLE (added)
- MECHANICAL FUME SUPPRESSANT (modified)
- METAL REMOVAL FLUID (added)
- PERFLUOROOCTANE SULFONIC ACID (PFOS) BASED FUME SUPPRESSANT (added)
- PERMANENT TOTAL ENCLOSURE (added)
- SCHOOL (modified)
- STALAGMOMETER (modified)
- TANK PROCESS AREA (added)
- TENSIOMETER (modified)
- TIER I HEXAVALENT CHROMIUM TANK (added)
- TIER II HEXAVALENT CHROMIUM TANK (added)
- TIER III HEXAVALENT CHROMIUM TANK (added)
- WEEKLY (modified)

The definition for enclosure opening was added and is any permanent, designed opening in a building enclosure or permanent total enclosure, such as passages, doorways, bay doors, and windows in a building enclosure. Stacks, ducts, and openings to accommodate stacks and ducts are not considered enclosure openings. These openings are specifically designed to accommodate a stack or duct and do not function as a general opening. Ducts where there is a gap between the duct and the roof opening should generally conform to the duct opening, but does not need to be the same shape. Figure 2-1: Roof View of Stack Opening and Enclosure Opening demonstrates the differences between the two.

Figure 2-1: Roof View of Stack Opening



The added definitions for Tier I, Tier II, and Tier III Hexavalent Chromium Tanks are noteworthy as many of the proposed amendments to Rule 1469 are associated with the newly added tanks that are potential sources of hexavalent chromium emissions.

The definitions for these tanks are as follows:

- TIER I HEXAVALENT CHROMIUM TANK means a tank permitted for a hexavalent chromium concentration of 1,000 parts per million (ppm) or greater and is not a Tier II or Tier III Hexavalent Chromium Tank.

As discussed in Chapter 1, SCAQMD staff sampled a number of tanks and the results showed that some tanks that are not currently regulated under Rule 1469 can contain high levels of hexavalent chromium. Tanks containing a hexavalent chromium concentration of 1,000 ppm or greater were included in this definition because it is consistent with the federal NESHAP for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks that are required to meet specific housekeeping practices. PAR 1469 will require Tier I Hexavalent Chromium Tanks to be subject to both the existing and newly added requirements for housekeeping and best management practices of the rule.

There is concern about hexavalent chromium tanks operating under conditions that can generate hexavalent chromium emissions outside of a tank. Hexavalent chromium tanks that are heated, air sparged, or electrolytic can generate hexavalent chromium emissions. High concentrations of hexavalent chromium were found by SCAQMD staff in sodium dichromate seal tanks and chrome stripping tanks with similar operating characteristics. These tanks are newly defined in PAR 1469 as follows:

- TIER II HEXAVALENT CHROMIUM TANK means a tank that is operated or permitted to operate by the SCAQMD within the range of temperatures and corresponding hexavalent chromium concentrations specified below and is not a Tier III Hexavalent Chromium Tank.

Temperature (° F)	Tier II Tank Concentration (ppm)
≥ 140 to <145	≥ 5,200 to < 10,400
≥ 145 to <150	≥ 2,700 to < 5,500
≥ 150 to <155	≥ 1,400 to < 2,900
≥ 155 to <160	≥ 700 to < 1,600
≥ 160 to <165	≥ 400 to < 800
≥ 165 to <170	≥ 180 to < 400
≥170	≥ 100 to < 200

- TIER III HEXAVALENT CHROMIUM TANK means a tank that is operated or permitted to operate by the SCAQMD within the range of temperatures and corresponding hexavalent chromium concentrations specified below; or

Temperature (° F)	Tier III Tank Concentration (ppm)
≥ 140 to <145	≥ 10,400
≥ 145 to <150	≥ 5,500
≥ 150 to <155	≥ 2,900
≥ 155 to <160	≥ 1,600
≥ 160 to <165	≥ 800
≥ 165 to <170	≥ 400
≥170	≥ 200

  - Contains a hexavalent chromium concentration greater than 1,000 ppm, and uses air sparging as an agitation method or is electrolytic; or
  - Is a hexavalent chromium electroplating or chromic acid anodizing tank.

Based on sampling and testing data conducted by SCAQMD discussed in Chapter 1, tanks containing any concentration of hexavalent chromium that are operated below 140° F have not been shown to exhibit elevated hexavalent chromium emissions. Additional sampling and testing data have demonstrated a correlation between temperature of the bath and hexavalent chromium tank concentration. Elevated temperatures correlated with hexavalent chromium emissions at low concentrations. Tier II Hexavalent Chromium Tanks have the potential to emit hexavalent chromium emissions at a rate between 0.20 mg/hr to 0.40 mg/hr. Therefore, Tier II Hexavalent Chromium Tanks are allowed to utilize other low-cost controls such as mechanical fume suppressants or tank covers to reduce hexavalent chromium emissions to below 0.20 mg/hr. Additional thresholds were added in determining a Tier III Hexavalent Chromium Tank. Tier III Hexavalent Chromium Tanks are subject to separate requirements for emission controls explained later in this chapter.

Requirements – Subdivision (d)

Subdivision (d) establishes the requirements for PAR 1469. Paragraph (d)(1) has been revised to require a separate meter to be hardwired for each hexavalent chromium electroplating or chromic acid anodizing tank instead of for each rectifier.

Paragraph (d)(2) has been revised to clarify two terms: 1) electroplating refers to chromium electroplating; and 2) anodizing tank refers to a chromic acid anodizing tank.

Paragraph (d)(4) has been added to require any Tier I, Tier II, or Tier III Hexavalent Chromium Tank to be operated within a building enclosure beginning 90 days after date of rule adoption. This provision requires that Tier I, Tier II, or Tier III Tanks be operated within a building enclosure, as defined by this rule. A building enclosure is a permanent building or physical structure, or portion of a building, enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with limited openings to allow access for people, vehicles, equipment, or parts. A room within a building enclosure that is completely enclosed with a floor, walls, and a roof would also meet this definition.

Paragraph (d)(5) has been added to require any Tier II or Tier III Hexavalent Chromium Tank to be operated within a building enclosure that meets additional requirements in subdivision (e). This provision does not require that a Tier I Tank be operated within a building enclosure that meets the additional requirements under subdivision (e) such as limitations on enclosure openings.

Requirements for Building Enclosures for Tier II and Tier III Hexavalent Chromium Tank(s) – Subdivision (e)

PAR 1469 adds requirements to operate any Tier II or Tier III Hexavalent Chromium Tank within a building enclosure that meets specific requirements under paragraphs (e)(1) through (e)(9) beginning 180 days after date of rule adoption. As discussed above, Tier I Hexavalent Chromium Tanks are required to operate within a building enclosure, however, the building enclosure where a Tier I Tank is operated (provided there is not a Tier II or III Tank) is not required to meet the additional requirements of this subdivision. The following summarizes those requirements for building enclosures for Tier II and III Hexavalent Chromium Tanks

Paragraph (e)(1) establishes requirements for enclosure openings for a building enclosure. Under this paragraph, the combined area of all building enclosure openings, including any roof openings for passage of equipment or vents through which fugitive hexavalent chromium emissions can escape from the building enclosure, shall not exceed 3.5% of the building enclosure envelope, which is calculated as the total surface area of the building enclosure's exterior walls, floor and horizontal projection of the roof on the ground. This requirement is based on U.S. EPA's Method 204 for Permanent Total Enclosures, however, unlike Method 204, building enclosures under PAR 1469 are not required to be under negative air pressure. As such, the requirement for a 5% allowance for openings in the building enclosure has been decreased to 3.5% to compensate for the absence of having a building enclosure vented to an add-on air pollution control device. Information on calculations for the building enclosure envelope, including locations and dimensions of openings counted toward the 3.5% allowance are required to be provided in the compliance status reports pursuant to paragraphs (p)(2) and (p)(3).

PAR 1469 identifies the type of openings that are not counted towards the 3.5% enclosure opening allowance. As specified in paragraph (e)(1), openings that close or consist of the following shall not be counted toward the combined area of enclosure openings:

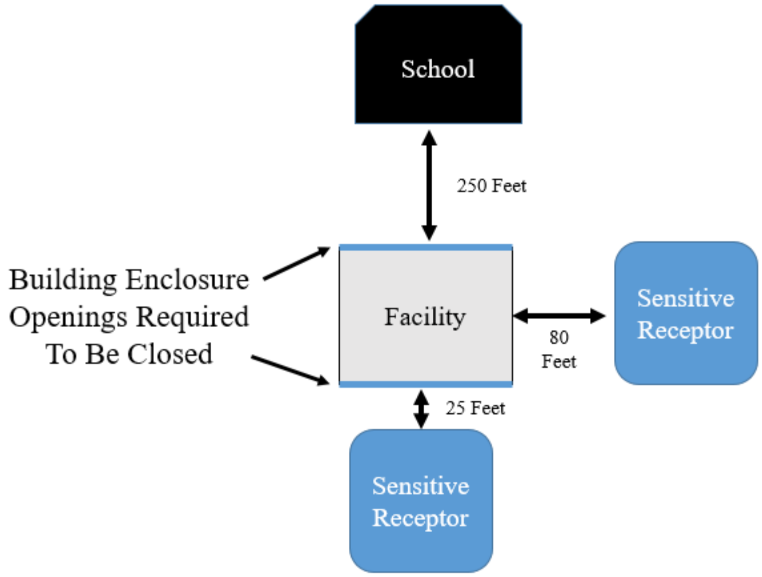
- ✓ Door that automatically closes;
- ✓ Overlapping plastic strip curtains;
- ✓ Vestibule;
- ✓ Airlock system, or
- ✓ Alternate method to minimize the release of fugitive emissions from the building enclosure that the owner or operator can demonstrate to the Executive Officer that is an equivalent or more effective method(s) to minimize the movement of air within the building enclosure. This provision allows the owner or operator to develop other low-cost methods that were not identified during the rulemaking.

Paragraph (e)(2) establishes the requirements to eliminate or minimize cross-draft that can occur when openings at opposite ends of building enclosure are open. Under this paragraph, owner or operators are required to ensure that any building enclosure opening that is on opposite ends of the building enclosure where air movement can pass through are not simultaneously open except during the passage of vehicles, equipment or people, not to exceed two hours, by either closing or using one or more of the methods for the enclosure opening(s) on one of the opposite ends of the building enclosure specified in subparagraph (e)(1)(A) through (e)(1)(E). Although PAR 1469 does not require the owner or operator of facility to either monitor or record the time the enclosure openings are open, if an operator is observed or information is obtained to show that an enclosure opening remains open for more than two hours, that would be a violation of the provisions. A provision was added to PAR 1469 also allows use of a barrier, such as a large piece of equipment, a wall, or any other type of barrier that restricts air movement from passing through the building enclosure to meet this requirement.

Paragraph (e)(3) establishes additional requirements for enclosure openings that are facing a sensitive receptor or school. Except for the movement of vehicles, equipment or people, the owner or operator is required to close any building enclosure opening or use any of the methods listed under paragraph (e)(1), that directly faces and opens towards the nearest: (A) sensitive receptor, with the exception of a school, that is located within 1,000 feet, as measured from the property line of the sensitive receptor to the building enclosure opening; (B) school that is located within 1,000 feet, as measured from the property line of the school to the building enclosure opening. If more than one school is within 1,000 feet of the building enclosure, only enclosure openings that directly face the nearest school are required to be closed to comply with paragraph (e)(3). Also, if more than one non-school sensitive receptor are within 1,000 feet of the building enclosure, only enclosure openings that directly face the nearest non-school sensitive receptor are required to be closed to comply with paragraph (e)(3).

Through the rule development process, a number of comments from stakeholders were made regarding sufficient air intake and concerns that PAR 1469 would require that all enclosure openings be closed, impacting worker comfort and safety. This provision combined with other provisions for enclosure openings such as the 3.5% enclosure opening allowance and closing openings that can lead to cross-draft provide additional protections for the community and sensitive receptors, while acknowledging the need to provide air intake for workers that are located in the building enclosure.

Figure 2-2: Building Enclosure Openings Required To Be Closed



Paragraph (e)(4) establishes requirements for enclosure openings, specifically roof openings. Under this paragraph, the owner or operator is required to ensure that all roof openings that are located within 15 feet from the edge of any Tier II or Tier III Hexavalent Chromium Tank are closed, except for roof openings that are used to allow access for equipment or parts, provide intake air for a building enclosure that does not create air velocities that impact the collection efficiency of a ventilation system for an add-on air pollution control device, or roof openings that are equipped with a HEPA filter or other air pollution control device. This provision is included in PAR 1469 because emissions testing from vents near a Tier III Tank and samples from vents and roof tops of buildings where Tier II and III Tanks were operated showed that hexavalent chromium emissions can escape through roof vents and accumulate on roof tops. These fugitive emissions leaving the building can lead to elevated levels of hexavalent chromium detected by ambient monitors. It should be noted that the definition of enclosure opening under PAR 1469 does not include stacks, ducts, and openings to accommodate stacks and ducts.

Paragraph (e)(5) establishes requirements when there is a breach in a building enclosure that is located near a Tier II or III Tank. A breach can be a break, rupture, crack, hole, large gap in the building enclosure. Under this paragraph, the owner or operator is required to repair a breach in a building enclosure that is located within 15 feet of the edge of any Tier II or III Tank within 72 hours of discovery. The provision establishes who to call and the procedures for a time extension to repair the breach, if needed.

Paragraph (e)(6) provides procedure to follow if there are specific provisions under paragraphs (e)(1) through (e)(4) that cannot be complied with due to safety or local building requirements. Regarding worker safety, stakeholders asked which agency requirement for the construction and/or operation of building enclosure took precedence: SCAQMD or Cal-OSHA/Federal OSHA. PAR 1469 acknowledges that a building enclosure should not be designed to conflict with either Cal-OSHA/Federal OSHA's requirements, or other municipal codes or agency requirements related directly to worker safety, and instead should be constructed in a manner that is compliant with all agency requirements. This may require the owner or operator of a facility to install additional equipment or modify the existing structure. Paragraph (e)(6) provides a mechanism for an owner or operator of a facility to allege that a Cal-OSHA/Federal OSHA or other municipal codes or agency requirements directly related to worker safety conflict with PAR 1469. The owner or operator shall notify the Executive Officer and submitting a Building Enclosure Compliance Plan that explains why a provision or provisions in paragraphs (e)(1) through (e)(4) cannot be met and the alternative compliance measures that shall be implemented. During the rulemaking process, SCAQMD staff contacted Cal-OSHA staff, and based on their review of the building enclosure provisions Cal-OSHA staff commented that there are not minimum ventilation rate for plating facilities and based on their review of PAR 1469 no conflicts between Cal-OSHA requirements and PAR 1469 were found. In the event that there is a conflict, however, PAR 1469 establishes a process to ensure that requirements from the referenced agencies can be implemented in a manner that minimizes release of fugitive emissions while maintaining worker safety.

Paragraph (e)(7) establishes the provisions for approval and disapproval of the Building Enclosure Compliance Plan if an owner or operator submits one under paragraph (e)(6). Under paragraph (e)(8) the owner or operator will have 90 days upon receiving approval from the Executive Officer to implement the approved alternative compliance measures. The owner or operator of a facility that implements and maintains the approved alternative compliance measures shall be deemed to have met the applicable requirements specified in paragraphs (e)(1) through (e)(4).

Paragraph (e)(9) incorporates a provision that allows an owner or operator to delay meeting certain building enclosure requirements if add-on pollution controls will be installed or are required for Tier II or III Hexavalent Chromium Tanks. Tier II or Tier III Hexavalent Chromium Tank(s) may introduce heat and humidity that were vented using building enclosure openings, which if closed, could cause the facility’s working environment to become excessively hot and humid. In lieu of a facility installing additional ventilation systems for the building enclosure, the add-on air pollution control device for a Tier II or Tier III Hexavalent Chromium Tank(s) would be able to control the heat and humidity. Therefore, the owner or operator of a facility that is installing an add-on air pollution control device to for either a Tier II or Tier III Hexavalent Chromium Tank(s) shall be exempt from paragraphs (e)(1) and (e)(4) until the add-on air pollution control device has been installed and commenced normal operations.

Housekeeping Requirements – Subdivision (f)

PAR 1469 moves housekeeping requirements from the requirements subdivision to its own dedicated subdivision (f). Amended provisions include the following:

- No changes to paragraph (f)(1) and (f)(2) regarding storage of chromic acid power or flakes.
- A modification to paragraph (f)(3) that requires the use of an approved cleaning method (see the definitions section for details about the types of cleaning that included in this term).
- Paragraph (f)(4) requires the use of an approved cleaning method when cleaning requires surfaces and it modifies the frequency from at least once every seven days to weekly.
- Paragraph (f)(5) was modified to require that containers that hold chromium or chromium-containing waste material shall be kept closed at all times except when filling or emptying. Based on site-visits, many facilities were already implementing this practice. Waste

containers can be a source of hexavalent chromium if left open and this codifies a current practice.

- Paragraph (f)(6) requires that on each day when buffing, grinding, or polishing, the owner or operator shall clean floors within 20 feet of a buffing, grinding, or polishing workstation. The requirements of (f)(6) shall not apply to owner or operators that utilize a metal removal fluid to control buffing, grinding, or polishing operations.
- Paragraph (f)(7) has been added to require owners or operators to remove any flooring in the tank process areas that is made of fabric or fibrous material such as carpets or rugs where hexavalent chromium materials can be trapped. Examples of acceptable flooring material are wooden floor boards and other solid material that can be cleaned and maintained as prescribed by the rule.
- Paragraph (f)(8) has been added to require owners or operators to conduct measures prior to and during the cutting of roof surfaces to prevent the generation of fugitive dust emissions:
  - Prior to being cut, affected roof surface areas shall be cleaned by using a HEPA vacuum; and
  - Minimize fugitive emissions during cutting activities, by using method(s) such as a temporary enclosure and/or HEPA vacuuming; and
  - Notify SCAQMD at least 48 hours prior to the commencement of any roof cutting activities into a building enclosure by calling 1-800-CUT-SMOG
- Paragraph (f)(9) requires that if a HEPA vacuum is used to comply with housekeeping provisions of subdivision (f), that the HEPA filter is free of tears, fractures, holes or other types of damage, and securely latched and properly situated in the vacuum to prevent air leakage from the filtration system.

Previous requirements pertaining to establishing a physical barrier between buffing, grinding, or polishing and where chromium electroplating or chromic acid anodizing have been moved to subdivision (g) - Best Management Practices. Previous requirements pertaining to compressed air cleaning have also been moved to subdivision (g).

For the purposes of PAR 1469, any time the roof surface of a building enclosure that is subject to subdivision (e) is intentionally broken, the action is considered to be cutting of the roof. This can include the installation of skylights, installation of vents, and construction of air pollution control devices on the roof. It should be noted that SCAQMD Rule 1403 applies to any renovation or demolition activity, and that the owner, operator, or any certified asbestos contractor for these activities will need to comply with the provisions of SCAQMD Rule 1403.

Best Management Practices – Subdivision (g)

PAR 1469 creates a new subdivision, (g) - Best Management Practices. Best Management Practices prescribe how an owner or operator shall conduct electroplating or anodizing and other ancillary operations to prevent the release or generation of fugitive emissions.

Paragraph (g)(1) provides clarification for provisions for minimization of drag-out for automated and non-automated lines. For facilities with automated lines, the owner or operator can utilize methods other than drip trays such as other containment devices to prevent hexavalent chromium-containing liquid from falling between electroplating or anodizing tanks. Additional cleaning requirements include cleaning residue on the drip tray or other devices used for containing liquids. Facilities without automated lines shall handle parts in a manner that does not cause hexavalent chromium containing liquid to drop on the floor. There are no proposed amendments to provisions regarding splash guards and cleaning splash guards.

Paragraph (g)(2) prohibits owners or operators from spray rinsing parts or equipment that were previously in a Tier II or Tier III hexavalent chromium tank, unless the part or equipment are fully lowered inside a tank where the liquid is captured inside the tank. Provisions under paragraph (g)(2) must be implemented beginning 90 days after date of adoption. If an owner or operator chooses to spray rinse above a process tank, they must ensure that any hexavalent chromium-containing liquid is captured and returned to the tank, and:

- Install a splash guard at the tank that is free of holes, tears or openings. Splash guards shall be cleaned weekly; or
- For tanks located within a process line utilizing an overhead crane system that would be restricted by the installation of splash guards, a low pressure spray nozzle may instead be used and operated in a matter that water flows off of the part or equipment.

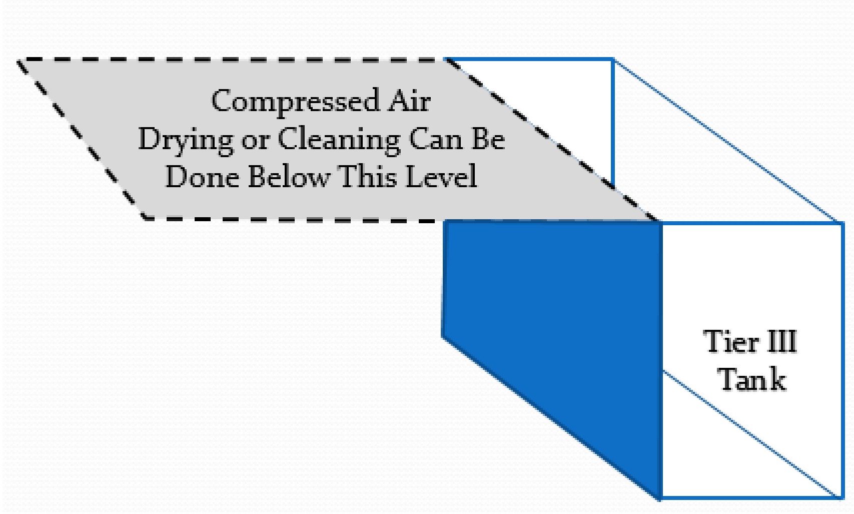
Subparagraph (g)(2)(B) which allows use of low pressure spraying was added based on input from stakeholders. During the development of PAR 1469, industry stakeholders requested consideration of the practice of using spray nozzles on the rack system that would rinse the part prior to moving onto the next finishing process. The water would be either applied in a misting manner or with a low pressure spray nozzle that does not create overspray. The low pressure spray was determined to be 35 pounds per square inch based on the definition of low pressure for residential water pressure.

Beginning 60 days after date of adoption, paragraph (g)(3) requires owners or operators to label each tank within the tank process area with a tank number or other identifier, bath contents, maximum concentration (ppm) of hexavalent chromium, operating temperature range, any agitation method used, and its status as a Tier I, Tier II, or Tier III Hexavalent Chromium Tank. Tank labeling will help operators as well as SCAQMD inspectors identify Tier I, II, and III Tanks and to ensure the appropriate operating conditions are maintained.

Beginning 90 days after date of adoption, paragraph (g)(4) requires all buffing, grinding, and polishing operations to take place within a building enclosure, while paragraph (g)(5) relocates the existing requirement to have a barrier that separates the buffing, grinding, or polishing area within a facility from the chromium electroplating or chromic acid anodizing operation. Both requirements prevent the generation of particulates that could act as a transportation medium for hexavalent chromium.

Paragraph (g)(6) prohibits compressed air cleaning or drying within 15 feet of all Tier II or Tier III Hexavalent Chromium Tank(s) unless a barrier separates those tanks from compressed air cleaning or drying operation, or the compressed air cleaning or drying is conducted in a permanent total enclosure. A tank wall may function as a barrier as long as parts are compressed air cleaned or dried below the lip of the tank as shown in Figure 2-3: Compressed Air Drying Near Tier II or Tier III Tank.

Figure 2-3: Compressed Air Drying Near Tier II or Tier III Tank



The concern is that particulates from those areas may become airborne, or the compressed air cleaning/drying may be conducted in a manner that impacts the collection efficiency of an add-on air pollution control device.

Air Pollution Control Technique Requirements – Subdivision (h)

PAR 1469 creates a new subdivision (h) for requirements regarding add-on air pollution control devices and emission standards. A summary of the provisions of subdivision (h) are described below.

Paragraph (h)(1) is an existing provision that prohibits the removal of pollution control equipment unless it is replaced with an air pollution control technique that meets the requirements for PAR 1469 Table 1 – Hexavalent Chromium Emission Limits for Hexavalent Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks.

Subparagraph (h)(2)(A) consolidates the emission standards and control requirements for existing, modified, and new hexavalent hard and decorative chromium electroplating and chromic acid anodizing facilities (see definitions) into PAR 1469 Table 1. For reference, this table is provided below in Figure 2-4.

Figure 2-4

Table 1: Hexavalent Chromium Emission Limits for Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks

Facility Type	Distance to Sensitive Receptor (feet)	Annual Permitted Amp-Hrs	Hexavalent Chromium Emission Limit (mg/amp-hr)	Minimum Air Pollution Control Technique
Existing Facility	≤ 330[1]	≤ 20,000	0.01	Use of Certified Chemical Fume Suppressant at or below the certified surface tension.[3]
Existing Facility	≤ 330[1]	> 20,000	0.0015[2]	Add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s).
Existing Facility	> 330[1]	≤ 50,000	0.01	Use of Certified Chemical Fume Suppressant at or below the certified surface tension.[3]
Existing Facility	> 330[1]	> 50,000 and ≤ 500,000	0.0015[2]	Use of an air pollution control technique that controls hexavalent chromium.
Existing Facility	> 330[1]	> 500,000	0.0015[2]	Add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s).
Modified Facility	Any	Any	0.0015[2]	Using an add-on air pollution control device(s), or an approved alternative method pursuant to subdivision (i).
New Facility	Any	Any	0.0011[2]	Using a HEPA add-on air pollution control device, or an approved alternative method pursuant to subdivision (i).

[1] Distance shall be measured, rounded to the nearest foot, from the edge of the chromium electroplating or chromic acid anodizing tank nearest the sensitive receptor (for facilities without add-on air pollution control devices), or from the stack or centroid of stacks (for facilities with add-on air pollution control devices), to the property line of the nearest sensitive receptor. The symbol ≤ means less than or equal to. The symbol > means greater than.
[2] As demonstrated by source test requirements under subdivision (k).
[3] Alternatively, a facility may install an add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s) that controls hexavalent chromium emissions to below 0.0015 mg/amp-hr as demonstrated through source test requirements under subdivision (k).

Additionally, all effective dates for notification to the Executive Officer, emission standards, permit application submittals, and control requirements were removed as these dates have passed and are in full effect.

Subparagraph (h)(2)(B) retains the siting requirements for New Chromium Electroplating and Chromic Acid Anodizing Facilities.

All requirements to conduct a facility-wide screening health risk assessment have been removed in this subdivision because these assessments are currently addressed by SCAQMD's ongoing program for new source review of toxics (Rule 1401 and 1401.1) and implementation of AB 2588 (Rule 1402).

Paragraph (h)(3) applies to decorative chromium electroplating processes using a trivalent chromium bath. PAR 1469 revises the requirement to utilize a *certified* chemical fume suppressant to remove the word "certified", as certification at the state level only required for hexavalent chromium electroplating and chromic acid anodizing operations. PAR 1469 adds that chemical fume suppressants cannot contain PFOS for consistency with the NESHAP for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks.

Emission Controls and Standards for Tier III Hexavalent Chromium Tanks (h)(4) Excluding Chromium Electroplating and Chromic Acid Anodizing Tanks

Paragraph (h)(4) adds new requirements for Tier III Hexavalent Chromium Tanks that are not chromium electroplating or chromic acid anodizing tanks. These tanks are required to be vented to an add-on air pollution control device or an approved alternative compliance method pursuant to subdivision (i). These tanks must comply with the following specific hexavalent chromium emission limits:

- 0.0015 mg/amp-hr, for existing facilities, if any tank(s) vented to an air pollution control device are electrolytic; or
- 0.0011 mg/amp-hr, for new facilities, if any tank(s) vented to an air pollution control device are electrolytic; or
- 0.20 mg/hr, if all tanks vented to the add-on air pollution control device are not electrolytic and the ventilation system has a maximum exhaust rate of 5,000 cfm or less; or
- 0.004 mg/hr-ft^2, with the applicable surface area based on the surface area of all Tier III Hexavalent Chromium Tank(s) and other tanks required to be vented to an add-on air pollution control device with a SCAQMD Permit to Operate, provided all tanks are not electrolytic, if the ventilation system has a maximum exhaust rate of greater than 5,000 cfm.

Compliance with these limits must be demonstrated by a source test.

For existing and new facilities with electrolytic Tier III Hexavalent Chromium Tanks that are not chromium electroplating or chromic acid anodizing, the emission standard is consistent with the emission standard in Table 1 of PAR 1469 (Figure 2-4) for chromium electroplating and chromic acid anodizing tanks.

<u>In the situation where a facility is controlling a hexavalent chromium electroplating or chromic acid anodizing tank subject to paragraph (h)(2), with the same air pollution control system as a Tier III Hexavalent Chromium Tank subject to paragraph (h)(4), the following emission rate shall apply:</u>

- <u>If the facility conducts one source test with all tanks in operation, the emission rate specified in paragraph (h)(2) would apply as appropriate. This would either be 0.0015 mg/amp-hr or 0.0011 mg/amp-hr; or</u>

- <u>If the facility isolates and operates each tank individually during the source test, the emission rate specified in paragraphs (h)(2) or (h)(4) would apply to each individual tank as appropriate.</u>

The emission limit for non-electrolytic Tier III Hexavalent Chromium Tanks is based on review of 80 source tests conducted on existing add-on air pollution control equipment venting chromium electroplating and chromic acid anodizing tanks. The source tests were conducted from 1999 through 2016. Of the 80 source tests, approximately 20 source tests were not used in the analysis as they either vented multiple electroplating or anodizing tanks or the source test was conducted with very high amperes that were not representative of the normal operations. The average emission rate for the remaining source tests was 0.18 mg/hr. Additionally, due to the fact that uncontrolled hexavalent chromium emissions from non-electrolytic tanks are typically much lower than that of electroplating and anodizing tanks, staff believes that these non-chromium electroplating or chromic acid anodizing Tier III Tanks can meet an emission limit of 0.20 mg/hr. Subparagraph (h)(4)(B), establishes the compliance schedule to submit permit applications for add-on pollution controls for Tier III Tanks. A staggered implementation schedule is proposed to provide a reasonable distribution of work for consultants, SCAQMD permitting, conducting source tests, etc. For Tier III Hexavalent Chromium Tanks that are in operation prior to date of rule adoption, the owner or operator shall submit a permit application to SCAQMD for the add-on air pollution control devices based on the electrolytic operation conducted at the facility as specified in PAR 1469 Table 2. For reference, this table is provided below in Figure 2-5.

Figure 2-5
Table 2: Permit Submittal Schedule for Add-on Air Pollution Control Devices for Previously Existing Tier III Hexavalent Chromium Tanks

Electrolytic Process at the Facility	Compliance Date for SCAQMD Permit Application Submittal for Add-on Air Pollution Control Device
Chromic Acid Anodizing	[180 Days after Date of Rule Adoption]
Hard Chromium Electroplating	[365 Days after Date of Rule Adoption]
Decorative Chromium Electroplating	[545 Days after Date of Rule Adoption]

If a facility has multiple chromium electrolytic processes occurring, the earliest compliance date would apply to the facility.

A source test is required to be conducted prior to the issuance of a SCAQMD Permit to Operate the add-on air pollution controls. Also, beginning no later than 30 days after rule adoption until the subject add-on air pollution control device is installed, the owner or operator is required to cover the subject tank no later than 30 minutes after ceasing operation of the tank. Tank covers are to be free of holes, tears, or gaps and handled in a manner that does not lead to fugitive emissions.

Subparagraph (h)(4)(C) establishes the compliance dates that an owner or operator a facility is required to install an add-on air pollution control device or implement an alternative compliance method or Hexavalent Chromium Phase-Out Plan to meet the hexavalent chromium emission limits specified in subparagraph (h)(4)(A). The owner or operator of a facility is required to install an add-on air pollution control device to meet the requirements under subparagraph (h)(4)(A) no later than 12 months after a Permit to Construct for an add-on air pollution control device has been issued by the Executive Officer. If an owner or operator elects to meet the requirements of (h)(4)(A) by implementing an approved alternative compliance method the owner or operator shall comply with the timeframe specified in the approved alternative compliance method. Further, if an owner or operator elects to phase out the use of hexavalent chromium in a chromium electroplating or chromic acid anodizing tank the approved Hexavalent Chromium Phase-Out Plan shall be submitted no later than two years after it is approved by the Executive Officer.

Under subparagraph (h)(4)(D), an owner or operator is not subject to the requirements of venting a Tier III Hexavalent Chromium Tank to an add-on air pollution control device if the uncontrolled hexavalent chromium emission rate is less than 0.2 mg/hr, as demonstrated by an SCAQMD approved source test conducted pursuant to the Technical Guidance Document for *Measurement of Hexavalent Chromium Emissions from Chromium Plating and Chromic Acid Anodizing Operations for Certification of Wetting Agent Chemical Mist Suppressant Subject to SCAQMD Rule 1469.*

Emission Controls and Standards for Tier II Hexavalent Chromium Tanks (h)(5)

Beginning 90 days after date or rule adoption, paragraph (h)(5) adds a provision that requires Tier II Tanks to utilize a tank cover, mechanical fume suppressant, or other method approved by the Executive Officer. Alternatively, the owner or operator may meet the emission reduction requirements of a Tier III Hexavalent Chromium Tank specified in subparagraphs (h)(4)(A) and (h)(4)(B).

Paragraph (h)(6) requires facilities to operate add-on air pollution controls at the applicable minimum hood induced capture velocity specified in the most current edition (i.e. at the time the permit application was deemed complete by SCAQMD) of the *Industrial Ventilation, A Manual of Recommended Practice for Design*.

Alternative Compliance Methods for Existing, Modified, and New Hexavalent Decorative and Hard Chromium Electroplating and Chromic Acid Anodizing Facilities – Subdivision (i)

Subdivision (i) retains the option to operate under an alternative compliance method to meet the emission limits specified in paragraphs (h)(2) and (h)(4). The alternative compliance option is available for existing, modified, and new facilities if the owner or operator can demonstrate that the alternative method(s) is enforceable, provides an equal or greater hexavalent chromium reduction, or greater risk reduction than compliance with the emission limits of specified in paragraphs (h)(2) and (h)(4). An owner or operator that elects to use an alternative method must submit an SCAQMD permit application that includes information specified in Appendix 7 of PAR 1469.

PAR 1469 removes the following paragraphs as they refer to past interim compliance options:

- Alternative Interim Compliance Options – Inventory and Health Risk Assessment
- Alternative Interim Compliance Options – Emission Reduction Plan
- Alternative Interim Compliance Options – Facility wide Mass Emission Rate
- Alternative Interim Compliance Options – Alternative Standards for Existing Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities with Low Annual Ampere Hour Usage

The alternative interim compliance options are no longer options and facilities will be required to comply with the respective requirements specified in subdivision (h).

Training and Certification – Subdivision (j)

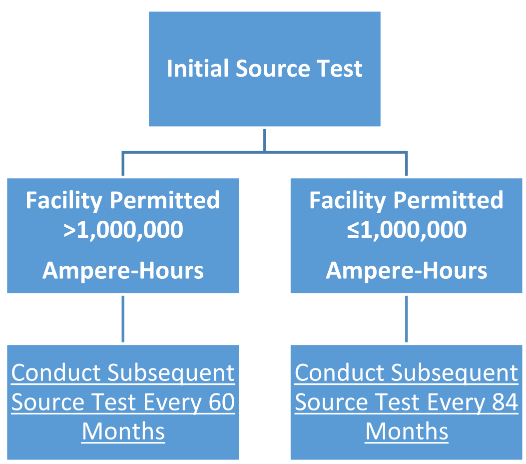
Previously the requirements for training and certification were located in paragraph (c)(7). The requirements has been moved to its own dedicated subdivision (j).

Source Test Requirements and Test Methods – Subdivision (k)

The subdivision has been renamed and relocated from subdivision (e) to (k). Currently, Rule 1469 only requires an initial source test either by 2009 or during installation. Periodic source tests are necessary to verify the continued performance of both the capture and control of hexavalent chromium emissions for add-on air pollution control devices specified in this rule. Although parameter monitoring can verify the operation of specific elements of the add-on air pollution control device, source tests allows for the comprehensive evaluation of the system.

Paragraph (k)(1) establishes source test requirements for the initial and subsequent source tests. Currently, Rule 1469 only requires an initial source test. Periodic source testing is needed to ensure that add-on pollution control equipment is operating properly and to that the emission limit is being achieved. As discussed in Chapter 1, staff did observe slot velocities that were below the needed air flow to ensure that emissions were being properly collected and moved towards the pollution control equipment. Throughout the rulemaking process, periodic source testing requirements were modified from once every other year to once every five or seven years depending on the facility's permitted annual amp-hours. Based on stakeholder input, the frequency of periodic subsequent source tests was modified based on the permitted amp-hours. Subparagraph (k)(1)(A) establishes the schedule for protocols and initial and subsequent source tests to meet the emission limits of paragraphs (h)(2) and (h)(4) in Table 3 – Source Tests Schedule in PAR 1469. In general, facilities with greater than 1,000,000 permitted annual amp-hours are required to source test no later than 60 months from the day of the most recent source test that demonstrates compliance with all applicable requirements and facilities with less than or equal to 1,000,000 permitted annual amp-hours are required to source test no later than 84 months from the day of the most recent source test that demonstrates compliance with all applicable requirements.

Figure 2-6: Flowchart Showing Source Test Requirements



Subparagraph (k)(1)(B) allows an owner or operator to submit a written request for additional time to conduct the initial source test. This subparagraph specifies the procedures of when the Executive Officer must be notified, the information that must be included in the notification, and the timing for approval to allow use of this provision.

Subparagraph (k)(1)(C) establishes provisions that allow an owner or operator to use an existing source test that was conducted after January 1, 2015 for compliance with provision for the initial source test provided the applicable emission limits in subdivision (h) are demonstrated, operating conditions during the source test are representative of current operating conditions, and the appropriate test methods were used. This provision reduces the impact to facilities that recently conducted a source test.

Subparagraph (k)(1)(D) establishes provisions for when a source test was conducted after January 1, 2015, however, the source test was not approved. Under this subparagraph, provided the owner or operator submits the source test to the Executive Officer for approval no later than 30 days after date of adoption, the Executive Officer will review the source test to verify if it can be used and meets the same criteria subparagraph (k)(1)(C).

Subparagraph (k)(1)(E) establishes provisions that require an owner or operator that is relying on a source test conducted after January 2015 under subparagraph (k)(1)(C) to conduct the first subsequent source test no later than January 1, 2024 and then follow the source testing schedule for subsequent source tests as specified in Table 3 – Source Tests Schedule of PAR 1469.

Subparagraph (k)(1)(F) clarifies that an owner or operator that elects to meet an emission limit specified in a paragraph (h)(2) using a certified wetting agent chemical fume suppressant or a certified alternative to a wetting agent chemical fume suppressant shall not be subject to the requirements of subparagraph (k)(1)(A). The rule interpretation for both the regulated community and SCAQMD was that a facility using a certified wetting agent chemical fume suppressant is not required to conduct a source test. A source test was performed during the certification process, which established a corresponding surface tension limit with the emission limit of 0.01 mg/ampere-hour.

Provisions for use of an Existing Performance Test in this subdivision were removed as the dates have passed and the provisions are no longer relevant.

Paragraph (k)(2) establishes requirements for approved test methods, test methods for add-on non-ventilated air pollution control devices, and methods to measure surface tension. There were no substantive changes to these provisions. This paragraph included clarifications that emissions testing for add-on non-ventilated air pollution control devices shall be conducted in accordance with Appendix 5 of PAR 1469.

Use of Emissions Screening Tests (k)(3)

Subparagraph (k)(3)(A) includes new requirements to PAR 1469 that allow the use of emissions screening tests. In lieu of conducting a source test for *subsequent* tests, the owner or operator may conduct an emission screening of hexavalent chromium. The emissions screening test shall:

- Consists of one run to evaluate the capture and control of hexavalent chromium emissions;
- Follow a source test protocol approved by Executive Officer; and
- Be representative of the operating conditions during the most recent source test

The owner or operator of a facility that previously submitted source test protocols approved by the Executive Officer may use an emissions screening test in lieu of a source test. An emissions screening test requires only one run to evaluate the hexavalent chromium emissions from a Tier II or Tier III Hexavalent Chromium Tank as opposed to the three runs required for a full source test.

Under subparagraph (k)(3)(B), an owner or operator with an SCAQMD approved source test conducted after January 1, 2009 will be allowed to conduct an emissions screening test to satisfy the requirements of conducting the *initial* source provided the subject source test met the criteria stated above. This subparagraph includes provisions that allow an operator to submit a source test that was conducted after January 1, 2009 for approval.

The emissions screening test of hexavalent chromium will show whether the air pollution control technique is operating and performing as intended. While parameter monitoring may evaluate the performance of capture periodically, the emissions screening test allows the verification of emission limits. Owners or operators may utilize this option as a method to reduce the testing time associated with conducting multiple runs required under a full source test. Within 30 days of receiving the results of the emissions screen test, subparagraph (k)(3)(C) requires the owner or operator to submit the results to the Executive Officer. Under subparagraph (k)(3)(D), the owner or operator will be required to conduct a source test using an approved method within 60 days of conducting an emission screening test that fails the capture efficiency test(s) specified in the source test protocol, exceeds an emission limit specified in the SCAQMD Permit to Operate, or exceeds an emission limit in subdivision (h).

Source Test Protocol (k)(4)

Paragraph (k)(4) establishes requirements for information required for source test protocols and provisions for when a previously approved source test protocol is used for subsequent source tests.

Emission Points Test Requirements (k)(5)

Paragraph (k)(5) establishes requirements for testing emission points unless a waiver is granted by U.S. EPA or the Executive Officer. There were no changes to this provision.

Capture Efficiency (k)(6)

Paragraph (k)(6) establishes the requirements for capture efficiency and adds more specificity: each add-on pollution control device must meet the design and ventilation velocities specified in *A Manual of Recommended Practice for Design* authored by the American Conference of Governmental Industrial Hygienists or alternative design criteria and ventilation velocities approved by the Executive Officer.

Smoke Test (k)(7)

Paragraph (k)(7) reference the methods that are required to be used for conducting a smoke test for add-on air pollution control devices (Appendix 5) and add-on non-ventilated air pollution control devices (Appendix 8).

Certification of Wetting Agent Chemical Fume Suppressant – Subdivision (l)

PAR 1469 paragraphs (l)(1), (l)(2), and (l)(3) modifies the existing requirements by prohibiting the addition of PFOS-based chemical fume suppressants and lowering the minimum surface tension of the tank to 40 dynes/cm, as measured by the stalagmometer, or below 33 dynes/cm, as measured by a tensiometer. This modification is made to be consistent with the federal NESHAP for Chromium Electroplating which bans the use of PFOS in chemical fume suppressants. The certification list will be updated periodically based on the certification process conducted by SCAQMD and CARB. Paragraph (l)(3) requires that the owner or operator shall use certified chemical fume suppressant in accordance with the certification and manufacturer's specifications to ensure the chemical fume suppressant is optimized to reduce hexavalent chromium emissions and no unintended issues are occurring such as excessive foaming.

Recertification Process for Wetting Agent Chemical Fume Suppressants (l)(4)

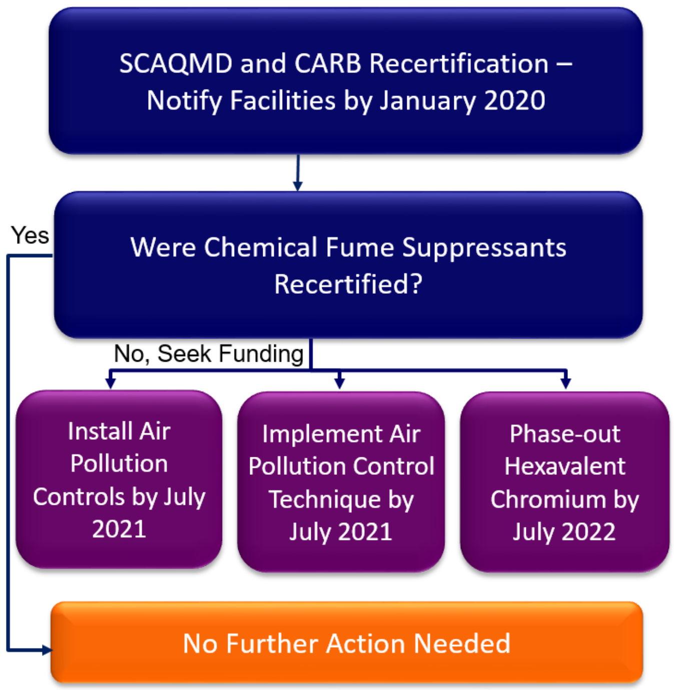
During the rulemaking for PAR 1469 information became publicly available that the reformulated non-PFOS chemical fume suppressants contain similar long-chain chemicals as PFOS such as Per- and Polyfluoroakyl (PFAS) substances and Perfluorooctanoic acid (PFOA). There is limited information on the health impacts of the non-PFOS chemical fume suppressants. Emissions tests have been conducted that show that non-PFOS chemical fume suppressants can significantly reduce hexavalent chromium emissions and can meet the required emission limit of 0.01 mg/amp-hour. However, there is currently no emissions data to understand the amount of non-PFOS chemical fume suppressant emissions that are released during plating and anodizing operations. SCAQMD staff will be conducting emissions tests to better understand the amount of non-PFOS chemical fume suppressant emissions that are released during plating and anodizing operations. The new certification process will consider toxicity reviews of compounds in the chemical fume suppressant, emissions testing for chemical fume suppressant emissions, surface tension, emissions testing for hexavalent chromium emissions, and additional data and information to evaluate the chemical fume suppressant.

Paragraph (l)(4) of PAR 1469 adds a new requirement that no later than January 1, 2020, the Executive Officer shall notify owner or operators of the availability of a chemical fume suppressant and the certification status of any potential wetting agent chemical fume suppressant going through the certification process conducted by SCAQMD and CARB.

Paragraph (l)(5) requires that if a wetting agent chemical fume suppressant will not be available by July 1, 2021, the owners or operators of a facility shall only add a chemical fume suppressant to a chromium electroplating or chromic acid anodizing tank based on the information in the notice specified in paragraph (l)(4). The date of July 1, 2021 was chosen to allow sufficient time for facilities to implement alternatives, manufacturers to potentially reformulate, and SCAQMD staff to certify the chemical fume suppressant.

If the notice indicates that a chemical fume suppressant that meets the certification requirements will not be available by July 1, 2021, the owner or operator shall meet the emission limits specified in paragraph (h)(2) no later than July 1, 2021 or implement an alternative to a wetting agent chemical fume suppressant that meets the requirements to (l)(7). If an owner or operator of a facility elects to meet the requirements of paragraph (l)(5) by implementing an alternative to a wetting agent chemical fume suppressant the owner or operator would be required to submit a permit application for the chromium electroplating or chromic acid anodizing tank(s) that includes the alternative and any conditions specified in the approval of the alternative in paragraph (l)(8). Further, an owner or operator of a facility may elect to meet the requirements of paragraph (l)(5) by phasing-out the use of hexavalent chromium in a chromium electroplating or chromic acid anodizing tank that uses a wetting agent chemical fume suppressant. If the owner or operator of a facility elects to phase out the use of hexavalent chromium the phase-out shall occur on or before July 1, 2022. The owner or operator of the facility shall submit a written commitment to the Executive Officer no later than January 1, 2021 that states the facility shall phase-out the use of hexavalent chromium in the electroplating or chromic acid anodizing tank that is using a chemical fume suppressant by July 1, 2022. This commitment shall be signed by the owner or operator of the facility. No later than July 1, 2022, the owner or operator would be required to cease operating and surrender SCAQMD permits to operate the chromium electroplating or chromic acid anodizing tank(s) that use(s) a wetting agent chemical fume suppressant. Figure 2-7 summarizes the re-certification timeline.

Figure 2-7: Revised Certification Timeline



Paragraph (l)(8) of PAR 1469 adds a new requirement that in the event the Executive Officer notifies facilities by January 1, 2020 that no wetting agent chemical fume suppressants will be available by July 1, 2021, the Executive Officer may identify one or more alternatives to a wetting agent chemical fume suppressant that meet the 0.01 milligrams per ampere-hour (mg/ampere-hour) limit. During the previous rule development of Rule 1469, wetting agent chemical fume suppressants were identified as an effective and low cost air pollution control technique to reduce hexavalent chromium emissions for facilities permitted less than or equal to 50,000 ampere-hours per year. The alternative to a wetting agent chemical fume suppressant will identify air pollution control technique(s) that must be used in combination to meet an equivalent emission rate of 0.01 mg/ampere-hour.

For example, the alternative to a wetting agent chemical fume suppressant may specify a combination of chemical and mechanical fume suppressants, or some combination of in-tank controls that will be certified to control emissions to a level below 0.01 mg/ampere-hour. The certification process will include source tests by SCAQMD and no initial or recurring source testing will be required for individual facilities that are eligible to use this certified alternative. If the owner or operator used the SCAQMD-approved alternative to the chemical fume suppressants, the owner or operator would be required to accept applicable permit conditions. SCAQMD staff will work with CARB regarding approving an alternative to chemical fume suppressants.

The alternative to a wetting agent shall:

- Meet an emission limit that is equally effective as the emission limit required for a wetting agent chemical fume suppressant;
- Be approved by the Executive Officer in consultation with CARB to meet the emission limit requirement; and
- Be used by the owner or operator in accordance with the approval

Under paragraph (h)(2), Table 1, an existing facility is allowed to meet a hexavalent chromium emission limit of up to 0.01 mg/ampere-hour, provided the maximum permitted facility-wide ampere-hour level does not exceed 50,000 ampere-hours per year (for facilities located more than or equal to 330 feet from a sensitive receptor) and 20,000 ampere-hour per year (for facilities located less than 330 feet from a sensitive receptor). Staff has conducted modeling that demonstrates that for a facility permitted at 50,000 ampere-hours/yr, with emissions of hexavalent chromium at 0.01 mg/ampere-hour, the maximum individual cancer risk (MICR) at 25 meters will not exceed 10-in-a-million ($10X10^{-6}$). This is a conservative analysis since facilities permitted at 50,000 ampere-hours/yr would have to be located at least 328 feet away and the emissions from facilities permitted at 20,000 ampere-hours/yr might be located closer but would have less emissions.

The proposed approach allowed under subparagraph (l)(8) is health protective and provides a lower cost option for smaller use facilities. The owner or operator can still elect not to use the approved alternative approach and can install an add-on air pollution control device that meets an emission limit of 0.0015 mg/ampere-hour. This approach will allow existing facilities that currently rely on certified chemical fume suppressants to limit their compliance costs in the event chemical fume suppressants are not certified. This approach will reduce capital costs as well as eliminate cost for initial or recurring source tests.

The owner or operator that fails to phase-out the use of hexavalent chromium by July 1, 2022, will be required to cease operation of the electroplating or chromic anodizing tank that contains hexavalent chromium until the facility can meet the specified emission limits.

Parameter Monitoring – Subdivision (m)

PAR 1469 modifies the section to require revised and additional parameter monitoring requirements for add-on air pollution control devices and add-on non-ventilated air pollution control devices.

Subparagraph (m)(1)(A) establishes requirements to continuously monitor the operation of the add-on air pollution control device. Specifics regarding installation, maintenance, and labeling are specified in Table 4 of PAR 1469. Requirements for maintaining the mechanical gauges are specified in Appendix 4 of PAR 1469.

Figure 2-8

Table 4:
Pressure and Air Flow Measurement Parameters

Permitted Air Pollution Control Technique	Location	Parameter Monitored	Units	Monitoring Start Date
Push-Pull Systems	Push Manifold	Static Pressure	Inches of water	60 Days After Completion of Initial Source Test or within [60 Days of Date of Rule Adoption]
All	Collection Manifold or Any Location within the System Using a Flow Meter	Static Pressure or Volumetric Flow Rate	Inches of water or Actual Cubic Feet per Minute	60 Days After Completion of Initial Source Test or within [60 Days of Date of Rule Adoption]
Existing on or Before [Date of Rule Adoption]	Across Each Stage of the Control Device	Differential Pressure	Inches of water	[Date of Rule Adoption]
Installed after [Date of Rule Adoption]	Across Each Stage of the Control Device	Differential Pressure	Inches of water	60 Days After Completion of Initial Source Test

As required in Table 4 of PAR 1469, the owner or operator using an add-on air pollution control device shall demonstrate that emissions are captured by measuring collection slot velocity and the push air manifold pressure. The demonstration shall be made during any source test. Beginning 60 days after the completion of the initial source test of a Tier II or Tier III Hexavalent Chromium tank, the owner or operator shall conduct additional parameter monitoring at least once every 180 days. An adequate collection slot velocity is required to ensure the collection of hexavalent chromium emissions is at the level measured during the source test.

Table 5 of PAR 1469: Add-on Air Pollution Control Device Parameter Monitoring, establishes the collection slot velocities and push air manifold pressure conditions that must be met. There are three categories: Acceptable Measurement, Repairable Measurement, and Failing Measurement. Since the collection slot velocity has two options, a measurement can be in more than one category. In this situation, the more favorable measurement would be used to determine the required action.

For example, if a collection slot velocity was measured at 1900 fpm (Repairable Measurement), which was equivalent to be 75% of the most recent passing source test (Failing Measurement), the measurement would necessitate the required action for a Repairable Measurement.

Figure 2-9
Table 5: Add-on Air Pollution Control Device Parameter Monitoring

	Collection Slot(s) Velocity[1]	Push Air Manifold Pressure (for push-pull systems only)	Required Action
Row 1: Acceptable Measurement	> 95% of the most recent passing source test or emission screening; or ≥ 2,000 fpm	95-105% compared to the most recent passing source test or emission screening	None
Row 2: Repairable Measurement	90-95% of the most recent passing source test or emission screening test, or < 2,000 fpm and > 1,800 fpm	90-95% or 105-110% of the most recent passing source test or emission screening test	Repair or replace, and re-measure within 3 calendar days of measurement
Row 3: Failing Measurement	< 90% of the most recent passing source test or emission screening test, or <1,800 fpm	> 110% or < 90% of the most recent passing source test or emission screening test	Immediately shut down any tanks controlled by the add-on air pollution control device that had a failing measurement

1 If the measured slot velocity occurs in multiple rows, the owner or operator shall implement the required action in the lower numbered row. For example the owner or operator would implement the required action in Row 2, if the measured slot velocity occurs in Rows 2 and 3.

A deficient measurement would indicate that the hexavalent chromium emissions are not being collected and being controlled by the add-on air pollution control device. If the measurement of a collection slot velocity is a "repairable measurement" of 90-95% of the most recent passing source test or emissions screening test or less than 2,000 feet per minute (fpm) and greater than 1,800 fpm, the owner or operator shall repair or replace and re-measure the collection slot velocity within 3 calendar days of the measurement. The tank controlled by the add-on air pollution control device may continue to operate with the add-on air pollution control device in operation. If the owner or operator fails to demonstrate that the collection slot velocity is an "acceptable measurement" upon re-measurement, greater than 95% of the most recent source test or emission screening or greater than 2,000 fpm, the owner or operator shall shut-down any tanks associated with the add-on air pollution control devices associated with the collection slot.

For tanks with a push-pull collection system, the push air may be monitored by measuring either the push air velocity or the push air pressure. Monitoring of push air velocity may be measured with an anemometer; however, push air pressure may be measured continuously with a pressure gauge installed in the push air manifold. Although the 29th Edition of *Industrial Ventilation Manual*, did not include a recommended minimum nozzle manifold pressure (P_m, "w.g.") in Table 13-72-1 "Push Nozzle Design Data," it has a recommended flow rate and velocity based on tank dimensions and push manifold design. The previous 28th Edition of *Industrial Ventilation Manual* included the recommended pressure. The minimum pressure may still be calculated using the recommended jet nozzle velocity (V_o) using equation 13.72.7 in the 28th Edition of the *Industrial Ventilation Manual*:

$$Pm = 1.5\ (\frac{V_o}{4005})^2$$

The values of V_o have remained the same in the 28th and 29th Editions of *Industrial Ventilation Manual*.

If the measurement of the collection slot velocity is in the "failing measurement" range, the owner or operator shall immediately shut down any tanks associated with any air add-on air pollution control devices associated with the collection slot. This prevents the owner or operator from operating a tank that may be emitting hexavalent chromium since the hexavalent chromium emissions are not being sufficiently collected. The owner or operator shall demonstrate that the collection slot velocity and/or push air manifold pressure is in the "acceptable measurement" by re-measuring the collection slot velocity and/or push air manifold pressure under typical operating conditions of the tank, with the exception of the suspension of electrolytic operations, prior to resuming electrolytic operations.

Smoke Test Requirements (m)(1)(E) and (m)(1)(F)

PAR 1469 subparagraph (m)(1)(E) clarifies the requirements of the smoke test by stating that both add-on air pollution control devices and add-on non-ventilated air pollution control devices are to be tested. PAR 1469 maintains the frequency for conducting smoke tests of once every 180 days. Add-on air pollution control devices have emission collection systems and the smoke tests demonstrate through a qualitative evaluation that emissions coming from the tank are being collected. Add-on non-ventilated air pollution control devices typically do not have an emissions collection system and a smoke test would demonstrate the containment of hexavalent chromium emissions by devices such as tank covers and merlin hoods.

Subparagraph (m)(1)(F) establishes what is an acceptable smoke test which is referenced in Appendix 5 and 8 of PAR 1469 for add-on pollution control devices and add-on non-ventilated pollution control devices, respectively. If an acceptable smoke test is not conducted, the owner or operator is required to immediately shutdown the Tier II and Tier III Hexavalent Chromium Tanks associated with the pollution control equipment until an acceptable smoke test is conducted.

HEPA Filters (m)(1)(G)

Subparagraph (m)(1)(G) establishes parameter monitoring for HEPA filters. Beginning 60 days after the completion of the initial source test, the owner or operator of an add-on air pollution control device equipped with HEPA filters shall ensure that the monitoring device for pressure drop:

- Is equipped with ports to allow for periodic calibration in accordance with manufacturer's specifications;
- Is calibrated according to manufacturer's specification at least once every calendar year; and
- Is maintained in accordance with the manufacturer's specification.

Wetting Agent Chemical Fume Suppressants (Excluding Decorative Chromium Electroplating Tanks Using a Trivalent Chromium Bath) (m)(2)

The requirement to measure surface tension weekly after 20 daily measurements with no violation has been modified to once every third operating day, but not less than once per week. The required non-PFOS chemical fume suppressants evaporate and degrade faster than a PFOS-containing products. SCAQMD staff is concerned that this faster degradation can result in faster increases to surface tension values. More frequent periodic monitoring of tank bath surface tensions will ensure that an adequate amount of chemical fume suppressants are being used to comply with the surface tension limits specified in the rule and permit conditions. Subparagraph (m)(2)(C) requires daily surface tension measurements for 20 consecutive operating days if the surface tension is not maintained. The owner or operator can resume monitoring every third operating after successfully measuring the surface tension daily for 20 consecutive operating days.

Foam Blanket, Polyballs or Similar Mechanical Fume Suppressants (m)(3) and (m)(4)

The requirement to visually inspect each operating day for coverage comparable to the coverage during the source test has been modified to include Tier II and Tier III Hexavalent Chromium Tanks.

Inspection, Operation and Maintenance Requirements (n)

The requirements for inspection and maintenance and the operation and maintenance plan apply to add-on air pollution control devices or alternative add-on air pollution control devices. The existing table previously found in Table 4 has been moved to Appendix 4: Table 4-1. Tier II Hexavalent Chromium Tanks not controlled by an add-on air pollution control device shall comply with the applicable inspection and maintenance requirements in Appendix 4: Table 4-4. The existing requirements for facilities using chemical fume suppressants or mechanical fume suppressants has also been moved to Appendix 4, Table 4-4. PAR 1469 also combines the existing requirements for the operation and maintenance plan into this subdivision.

Also, Tier II hexavalent chromium tanks not controlled by an add-on air pollution control device and Tier I, Tier II, and Tier III hexavalent chromium tanks are required to comply with new inspection and maintenance requirements 90 days after the date of rule adoption.

Beginning 90 days after the date of rule adoption, paragraph (n)(3) and paragraph (n)(4) requires the owner or operator of a facility to comply with the additional inspection and maintenance requirements in Appendix 4.

Also, beginning 90 days after date of the rule adoption, paragraph (n)(9) requires the owner or operator to revise the facility's operation and maintenance plan to incorporate of the inspection and maintenance requirements for a device or monitoring equipment that is identified in Table 4-2 and Table 4-3 of Appendix 4.

Paragraph (n)(10) requires the owner or operator to photograph the ampere-hour reading of the ampere-hour being replaced and the new ampere-hour meter immediately after installation.

Recordkeeping and Reporting – Subdivisions (o) and (p)

Paragraph (o)(1) clarifies that the inspection records apply to facilities using either an add-on air pollution control devices or an alternative add-on air pollution control devices. Additional recordkeeping requirements have been included to reflect the proposed provisions for building enclosures, housekeeping, best management practices, periodic source tests, capture efficiency tests, emission screening, and parameter monitoring. Inspection and maintenance requirements have been moved to Appendix 4.

As part of the ongoing compliance status and emission reports (specified in Appendix 3), facilities should report the results of add-on air pollution ventilation measures conducted during the most recent source test. Information would include the velocity of each collection slot and push air manifold. Facilities must also report any pollution prevention measures that have been implemented that eliminate or reduce the use of hexavalent chromium in the chromium electroplating or chromic acid anodizing process. Also required in the compliance status reports are calculations for building enclosure envelopes, including locations and dimensions of openings counted towards the 3.5% allowance.

Paragraph (p)(4) revises “Reports of Breakdowns” to “Notification of Incident”. As background, SCAQMD Rule 430 provides breakdown coverage, where the facility may not be in violation of a permit condition or rule requirement, if the Executive Officer determines that it was a valid breakdown based on evidence provided by the owner or operator. However, the existing reference to Rule 430 in Rule 1469 is conflicting as Rule 430 does not apply to any Regulation XIV rules.

As a result, PAR 1469 replaces breakdown provisions with “Notification of Incident” which incorporates similar notification language used in Rule 430 by requiring the owner or operator to notify SCAQMD via 1-800-CUT-SMOG within four hours of the incident or within four hour of the time the owner or operator knew or reasonably should have known of the following:

- Any failed smoke test
- Any failed source test
- An exceedance of a permitted ampere-hour limit, or
- A malfunction of a non-resettable ampere-hour meter.

A supplemental report is required to be submitted no later than 30 calendar days from the date of incident.

New and Modified Sources (removed)

PAR 1469 removes previous subdivision (l) relating to New and Modified Sources as facilities are required to submit a permit prior to altering or installing equipment under existing SCAQMD rules for permitting (Regulation II) and toxic new source review (Rule 1401).

Exemptions – Subdivision (r)

Due to the new requirements for Tier I, II, and III Hexavalent Chromium Tanks, PAR 1469 removes the exemption for process tanks associated with a chromium electroplating or chromic acid anodizing process in which neither chromium electroplating nor chromic acid anodizing is taking place. One of the objectives of PAR 1469 is to control emissions from tanks that were identified as sources of hexavalent chromium where neither electroplating nor chromic acid anodizing is taking place.

PAR 1469 also removes the exemption that would suspend requirements during periods of equipment breakdown. As discussed earlier, references to Rule 430 have been removed due to the lack of applicability to Regulations XIV.

PAR 1469 adds an exemption from the requirements of subparagraphs (f)(6), (g)(5), and (g)(6) as long as the buffing, grinding or polishing operations are conducted under a continuous flood of metal removal fluid. The application of metal removal fluid has been demonstrated to reduce emissions.

Title V Permit Requirements (removed)

PAR 1469 removes the subdivision (o) as SCAQMD Rule 3002 already requires a facility to obtain a Title V permit and comply with the conditions. Therefore, this subdivision is unnecessary and duplicative.

Chromium Electroplating or Chromic Acid Anodizing Kits Requirements (removed)

PAR 1469 removes the requirements for chromium electroplating or chromic acid anodizing kits as this existing language was from the state's Chrome Plating ATCM regarding prohibitions on chromium electroplating and chromic acid anodizing kits. This language has been removed as Rule 1469 facilities are still subject to those requirements under state law.

Conditional Requirements for Permanent Total Enclosure – Subdivision (t)

Paragraph (t)(1) requires the owner or operator of a facility to install a permanent total enclosure for a Tier III Hexavalent Chromium Tank that does not exceed 3.5% for all enclosure openings as specified in paragraph (e)(1)for a Tier III hexavalent chromium tank:

- That results in more than one non-passing source test as required in paragraph (k)(1) occurring within a consecutive 48-month period; or
- Not immediately shut down pursuant to clause (m)(1)(C)(iii) or subparagraph (m)(1)(D) or subparagraph (m)(1)(F) more than once within a consecutive 48-month period and the facility is greater than 1,000 feet from a sensitive receptor; or
- Not immediately shut down pursuant to clause (m)(1)(C)(iii) or subparagraph (m)(1)(D) or subparagraph (m)(1)(F) once and the facility is 1,000 feet or less from a sensitive receptor.

The distance of a sensitive receptor or a school to the facility shall be measured from the property line of the sensitive receptor or school to the nearest property line of the facility.

Paragraph (t)(2) allows the owner or operator to contest the requirement in paragraph (t)(1) to install a permanent total enclosure within 30 days of receiving notification from the Executive Officer that the requirement had been triggered. A written report contesting the requirement shall include evidence that installation of the permanent total enclosure is not warranted based on the following criteria:

- The incidents of non-compliances did not occur; or
- The owner or operator resolved the specified incidents of non-compliances specified in paragraph (t)(1) in a timely manner; or
- The owner or operator implemented specific measures minimize the hexavalent chromium emissions.

The Executive Officer will use the information in the written report to determine whether the permanent total enclosure is required and will notify the owner or operator within 90 days of receiving the written report.

Paragraph (t)(4) requires permanent total enclosures to vent to an add-on air pollution control device that is fitted with HEPA filters, or other filter media that is rated by the manufacturer to be equally or more effective, and designed in a manner that does not conflict with requirements or guidelines set forth by OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety.

Paragraph (t)(5) requires permit applications for permanent total enclosures to be submitted to the Executive Officer as follows:

- No later than 180 days after notification by the Executive Officer if the property line of the facility is within 500 feet of the property line of any sensitive receptor.
- No later than 270 days after notification by the Executive Officer for all other facilities.

Installation of the permanent total enclosure shall be completed no later than 12 months after the Permit to Construct is issued by the Executive Officer.

Hexavalent Chromium Phase-out – Subdivision (u)

Paragraph (u)(1) provides that owners and operators of facilities with an existing Tier III Tank that plan to eliminate or reduce hexavalent chromium concentrations within the tank shall not be subject to the requirements of paragraph (h)(4) to vent the tank to an add-on air pollution control device. In order to qualify for this exemption, facilities must submit a plan to the Executive Officer for approval that includes:

- The method by which the hexavalent chromium concentration will be eliminated or reduced and expected completion date; and
- A list of milestones necessary to occur, including their projected dates; and
- A list of all control measures that will be implemented until the concentration is eliminated or reduced.

Paragraph (u)(2) requires the Hexavalent Chromium Phase-Out Plan to be subject to the fees specified in Rule 306.

Paragraph (u)(4) requires the owner or operator to submit a progress report to the Executive Officer by the first day of each calendar quarter indicating the performance to meet the increments of progress for the previous quarter or submit according to an alternative schedule as specified in the approved plan.

Paragraph (u)(5) requires owners or operators to submit complete SCAQMD permit applications to comply with subdivision (h) if:

- The owner or operator does not eliminate or reduce hexavalent chromium by the final completion date in the Hexavalent Chromium Phase-Out Plan;
- The Executive Officer denies a resubmitted Hexavalent Chromium Phase-out Plan; or
- The owner or operator fails to resubmit the Hexavalent Chromium Phase-Out Plan.

Paragraph (u)(6) requires the owner or operator to install the add-on air pollution control device no later than 180 days after a Permit to Construct is issued.

Time Extensions – Subdivision (v)

Paragraph (v)(1) allows an owner or operator of a facility to submit a request to the Executive Officer for a one-time extension for up to 12 months to:

- Complete installation of an add-on air pollution control device, implement an approved alternative compliance method, or implement an approved Hexavalent Chromium Phase-Out Plan to meet the requirements under subparagraph (h)(4)(C); or
- Meet the hexavalent chromium emission limit, phase-out the use of hexavalent chromium, or implement an alternative to a wetting agent chemical fume suppressant required under paragraph (l)(5).

Paragraph (v)(2) requires an owner or operator of a facility that requests a time extension under paragraph (v)(1) to submit the request no later than 90 days before the compliance deadline specified in subparagraph (h)(4)(C) or paragraph (l)(5) and provide:

- The facility name, SCAQMD facility identification number, and the name and phone number of a contact person;
- A description of the chromium electroplating or chromic acid anodizing tank and the SCAQMD Permit to Operate and tank number;
- A description of the emission reduction approach that is being implemented;
- The specific provision under subparagraph (h)(4)(C) or paragraph (l)(5) for which a compliance extension is being requested;
- The reason(s) a time extension is needed;
- Progress in meeting the provisions in subparagraph (h)(4)(C) or paragraph (l)(5) including but not limited to date permit application was submitted to the SCAQMD, date permit to construct was approved, purchase order of equipment, date of service of contractors or consultants to install equipment; and
- The length of time requested, up to 12 months.

Paragraph (v)(3) sets-forth criteria for the Executive Officer to review and approve the time extension requested by an owner or operator. Specifically, the owner or operator would be required to demonstrate that there are specific circumstances beyond the control of the owner or operator that necessitate additional time to meet the compliance dates specified under subparagraph (h)(4)(C) and paragraph (l)(5). Additionally, the demonstration would be required to be substantiated with information that includes, but is not limited to detailed schedules, engineering designs, construction plans, permit applications, purchase orders, economic burden, and technical infeasibility.

Appendices

All additions and amendments to the following appendices have been made in order to provide clarity and information on PAR 1469.

Appendix 1 – Content of Source Test Reports

- Items 9-11 have been added to require applicable industrial ventilation limits; collection slot velocities (if applicable); and measured static, differential, or volumetric flow rate at the push manifold; across each stage of the control device; and exhaust stack (if applicable).

Appendix 4 – Notification of Construction Reports

- Removed because information required for future construction of equipment at new or existing facilities is submitted with a Permit to Construct.

Appendix 4 – Summary of Inspection Requirements

- Table 4-1: Summary of Inspection and Maintenance Requirements for Sources Using Add-on Air Pollution Control Device(s) or Add-On Non-Ventilated Air Pollution Control Device(s) previously in Table 4 has been added.
- Table 4-2: Additional Inspection and Maintenance Requirements for Tier I, II, and III Hexavalent Chromium Tank(s) has been added.
- Table 4-3: Summary of Inspection and Maintenance Requirements for Sources Not Using Add-on Air Pollution Control Device to Control Hexavalent Chromium Tank(s) has been added.
- Table 4-4: Summary of Inspection and Maintenance Requirements for Sources Using Chemical or Mechanical Fume Suppressants previously in Table 5 has been added.

Appendix 5 – Smoke Test for Add-on Non-Ventilated Air Pollution Control Device

Appendix 7 – Distance Adjusted Ampere-Hour and Annual Emissions Limits for Facilities Located More Than 25 Meters from a Residence or Sensitive Receptor

- Removed as the tables included in the appendix were for provisions in the Rule 1469 that were removed

Appendix 7 – Information Demonstrating an Alternative Method(s) of Compliance Pursuant to Subdivision (i)

- Item 5 has been added to require an owner or operator to demonstrate that the facility is at least 75 feet from a sensitive receptor. Facilities that are within 75 feet from a sensitive receptors are ineligible to utilize an alternative method and are required to use an add-on air pollution control device.

Appendix 8 – Smoke Test to Demonstrate Capture Efficiency for an Add-on Air Pollution Control Device(s) Pursuant to Paragraph (k)(6)

- Item 2.1 has removed a reference to Model #15 049 Tel-Tru T-T Smoke Sticks from E. Vernon Hill Incorporated

Appendix 10 – Tier II and Tier III Hexavalent Chromium Tank Thresholds

Numbering was added for Items 1, 2, and 3. The information within those items are not new provisions since the October 2, 2018 proposed amended rule language.

- Item 1. This identifies the temperature ranges and corresponding hexavalent chromium concentrations that would classify a tank to be either a Tier II Hexavalent Chromium Tank or Tier III Hexavalent Chromium Tank.
- Item 2. This clarifies that electrolytic tanks with a hexavalent chromium concentration greater than 1,000 ppm shall be considered a Tier III Hexavalent Chromium Tank regardless of operating temperature.

- Item 3. This clarifies that air sparged tanks with a hexavalent chromium concentration greater than 1,000 ppm shall be considered a Tier III Hexavalent Chromium Tank regardless of operating temperature.
- Item 4 has been added since the October 2, 2018 proposed amended rule language. It allows small tanks with a surface area less than four square feet that have a hexavalent chromium concentration less than 11,000 ppm with a temperature less than 210 degrees Fahrenheit to be exempt from the requirements of subparagraph (h)(4)(A) under certain circumstances. Staff calculated the emissions from these tanks and if the operator is operating the tank between 170 and 210 degrees Fahrenheit for two and one-half (2.5) hours per week or less, maximum potential hexavalent chromium emissions from these tanks would be less than the maximum potential emissions from tanks controlled to 0.2 mg/hour. Although no add-on pollution controls would be required for these small tanks, the operator must cover the tank pursuant to paragraph (h)(5) by utilizing a tank cover and will be required to maintain a data logger pursuant to paragraph (n)(3), to log the duration of time and temperature of tank to demonstrate the temperature of the tank is between 170 and 210 degrees Fahrenheit for no more than 2.5 hours per week.

CHAPTER 3: IMPACT ASSESSMENT

AFFECTED FACILITIES

Based on site visits conducted by SCAQMD staff, SCAQMD permit database searches, internet searches, and third-party sources, there are a total of 115 facilities that either conduct chromium electroplating or chromic acid anodizing. SCAQMD staff conducted site visits at 47 facilities, each with a variety of air pollution controls and operations.

EMISSION IMPACTS

PAR 1469 affects 115 facilities conducting electroplating or anodizing that use hexavalent chromium or trivalent chromium. Implementation of PAR 1469 will reduce both point source (requiring controls on previously uncontrolled tanks) and fugitive emissions (improving housekeeping and requiring operations to be conducted in a building). Quantifying the point source emissions reductions is difficult as there is large variance in hexavalent chromium emissions between the tanks and there are a limited number of source tests. The emissions of other air toxics generated the metal finishing operations may be reduced as well.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to CEQA and SCAQMD Rule 110, the SCAQMD, as lead agency for the proposed project, has prepared a Draft Environmental Assessment (EA) for PAR 1469. The environmental analysis in the Draft EA concluded that PAR 1469 would not generate any significant adverse environmental impacts, and therefore no alternatives or mitigation measures are required. The Draft EA was released for a 32-day public review and comment review period from February 16, 2018 to March 20, 2018. Two comment letters were received during ~~from~~ the public comment period relative to analysis presented in the Draft EA.~~,~~ The comment letters and responses to the comments ~~will be prepared and~~ were included in Appendix E of the Final EA (dated August 2018), which was released as part of the Governing Board package for the first Public Hearing on September 7, 2018. Since the release of the Draft EA, modifications were made to the proposed project which were reflected in the Final EA. Further, subsequent to the release of the Final EA, some additional modifications were made to PAR 1469 which are reflected in the Revised Final EA (dated October 2018). SCAQMD staff has reviewed the modifications to the proposed project and concluded that none of the modifications constitute significant new information, or a substantial increase in the severity of an environmental impact, or provide new information of substantial importance regarding the Draft EA, Final EA, or Revised Final EA. In addition, revisions to Proposed Amended Rule 1469 in response to verbal and written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Draft EA pursuant to CEQA Guidelines Section 15073.5 or 15088.5. Therefore, the Draft EA and Final EA has been revised to reflect the aforementioned modifications and to include the comment letters and responses to comments such that it is now the Revised Final EA. The SCAQMD Governing Board must review the adequacy of the Revised Final EA, including responses to comments, prior to the certification of the Revised Final EA and adoption of the proposed amendments to Rule 1469.

SOCIOECONOMIC IMPACT ASSESSMENT

A Draft Socioeconomic Impact Assessment ~~will~~ was prepared and ~~be~~ released on ~~or before~~ October ~~3~~2, 2018 for public review and comment prior to the SCAQMD Governing Board Hearing on PAR 1469, which is anticipated to be heard on November 2, 2018.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

Requirements to Make Findings

H&SC Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report.

Necessity

PAR 1469 is needed to further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations. PAR 1469 proposes new requirements for hexavalent chromium tanks, such as dichromate seal tanks, that are currently not regulated under Rule 1469. PAR 1469 requires air pollution controls for hexavalent chromium tanks that have the potential to emit hexavalent chromium. In addition, PAR 1469 includes periodic source testing, parameter monitoring of control equipment, requirements for building enclosures, and additional housekeeping and best management practices for all hexavalent chromium tanks. Proposed requirements include triggered provisions for permanent total enclosures vented to air pollution controls based on non-compliance with specific source testing or monitoring requirements. PAR 1469 also revises existing requirements to reduce surface tension limits and prohibit the use of chemical fume suppressants that contain PFOS in order to be consistent with the Chrome Plating NESHAP.

Authority

The SCAQMD Governing Board has authority to adopt PAR 1469 pursuant to H&SC Sections 39002, 39650 et. seq., 40000, 40440, 40441, 40702, 41508, and 41700.

Clarity

PAR 1469 is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

Consistency

PAR 1469 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations.

Non-Duplication

PAR 1469 will not impose the same requirements as an existing state or federal regulations. PAR 1469 implements the state ATCM and U.S. EPA's NESHAP for chrome plating and anodizing facilities. PAR 1469 incorporates provisions from the state ATCM and NESHAP as well as has additional provisions that are more stringent that the NESHAP and ATCM. The proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD.

Reference

By adopting PAR 1469, the SCAQMD Governing Board will be implementing, interpreting or making specific the provisions of H&SC Section 41700 (nuisance), and Federal Clean Air Act Section 112 (Hazardous Air Pollutants) and Section 116 (Retention of State authority), California Code of Regulations Sections 93102-93102.16 (Airborne Toxic Control Measure for Chromium Plating and Chromic Acid Anodizing Facilities), and 40 CFR Part 63, Subpart N (National Emission Standards for Hazardous Air Pollutant Emissions: Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks).

COMPARATIVE ANALYSIS

H&SC Section 40727.2 requires a comparative analysis of the proposed rule requirements with those of any federal, state, or SCAQMD rules and regulations applicable to the same equipment or source category.

The following regulations are compared to PAR 1469 in this analysis:

- Federal – National Emission Standards for Hazardous Air Pollutant Emissions: Hard and Decorative Chromium Electroplating and Chromium Anodizing (NESHAP)
- State – Airborne Control Toxic Measures for Hexavalent Chromium Emissions from Chromium Plating and Chromic Acid Anodizing Facilities (ATCM)

Rule Element	PAR 1469	ATCM	NESHAP
General Requirements	• Require operation of a Tier I, Tier II, or Tier III Hexavalent Chromium tank to be in a building enclosure	None Specified	None Specified
Building Enclosure Requirements for Tier II and Tier III Tanks	Beginning [180 days after Date of Rule Adoption], the owner or operator of a facility shall only operate Tier II and Tier III Hexavalent Chromium and associated process tanks within a building enclosure that meets the following requirements: • Combined area of all enclosure openings shall not exceed 3.5% • Close or limit openings that are on opposite ends of the building	None Specified	None Specified

	• Close any enclosure opening that directly faces and opens towards up to two sensitive receptors
	• Close all enclosure openings in the roof that are located within 15 feet of Tier II and Tier III Hexavalent Chromium Tanks except for openings that:
	  ○ Allow access for equipment or parts; or
	  ○ Provide intake air or circulation air for a building enclosure that does not create air velocities that impact the collection efficiency of a ventilation system for an add-on air pollution control device; or
	  ○ Are equipped with a HEPA filter or other air pollution control device
	• Repair any breach within 72 hours of discovery
	• The owner or operator shall notify the Executive Officer of any conflicting requirements set by any other government agency and propose alternative compliance		

	measure(s) to minimize the release of fugitive emissions		
Housekeeping Requirements	• Clean, using an approved method, surfaces within the enclosed storage area, open floor area, walkways around Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s) or any surface potentially contaminated with hexavalent chromium weekly; • Clean, using an approved method, or contain using a drip tray or other containment device, any liquid or solid material that may contain hexavalent chromium that is spilled immediately and no later than one hour after being spilled. • Containers that contain chromium containing waste material shall be kept closed at all times except when being filled or emptied; • On days when buffing, grinding, or polishing are conducted, the owner or operator shall clean, using an approved cleaning method, floors within 20 feet of a buffing, grinding or polishing workstation	• Clean at least once every seven days surfaces within the enclosed storage area, open floor area, walkways around the electroplating or anodizing tank (s), or any surface potentially contaminated with hexavalent chromium, that accumulates or potentially accumulates dust; • Clean or contain spilled liquid or solid material containing hexavalent chromium within one hour to minimize track out. • Store, dispose, recover, or recycle chromium or chromium containing wastes generated from housekeeping activities using practices that do not lead to fugitive dust and in accordance with hazardous waste requirements	• At least once every 7 days, surfaces within the enclosed storage area, open floor area, walkways around affected tanks contaminated with hexavalent chromium from an affected chromium electroplating or chromium anodizing tank shall clean the surfaces using one of the following methods; HEPA vacuuming, hand-wiping with a damp cloth, wet mopping, hose down or rinse with potable water, other cleaning method approved by permitting authority or apply a non-toxic dust suppressant • Begin clean up, or otherwise contain all spills within 1 hour of the spill. • All chromium or chromium-containing wastes generated from housekeeping activities shall be stored, disposed, recovered, or recycled so that practices do not lead to fugitive dust and in accordance with

	• Eliminate all flooring or walkways in the tank process area that is made of fabric such as carpets or rugs where hexavalent chromium containing materials can become trapped.
	• During the cutting of any roof surface of a building enclosure the owner or operator shall perform the following:
	  ○ Prior to cutting, roof surfaces shall be cleaned by using a HEPA vacuum
	  ○ All cutting activities shall be conducted in a manner that does not generate fugitive emissions
	  ○ Notify SCAQMD at least 48 hours prior to the commencement of any work being performed
			hazardous waste requirements

Best Management Practices	• Facilities with automated lines shall have drip trays or other containment equipment between Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s) and its adjacent tank • Facilities without automated lines shall handle parts and equipment used to	• Minimize drag-out from hexavalent chromium electroplating and chromic acid anodizing tank(s) by installing drip trays for facilities with automated lines, or by handling electroplated or anodized parts such that chromic acid is not	• Install drip trays that collect and return any bath solution, contain and return to the tank any bath solution, contain and return to the tank any bath solution, or collect and treat in an onsite wastewater

	handle such parts, so that liquid containing chromium is not dripped outside the electroplating or anodizing tanks, unless the liquid is captured by a drip tray or other containment device • The owner or operator shall not spray rinse parts or equipment that have chromium-containing liquid unless the parts or equipment are fully lowered inside a tank where the overspray and all liquid is captured inside the tank. Alternatively the owner or operator may: ○ Install a splash guard at the tank that is free of holes, tears, or openings ○ For tanks located within a process line, utilizing an overhead crane system, a low pressure spray nozzle and operated in a manner such that water flows off of the part or equipment and into the tank • Maintain clear labeling of each tank within the tank process area with a	dripped outside of the electroplating tank. • Facilities without automated lines that spray down parts over the electroplating or anodizing tank(s) shall install splash guards • Separate buffing, grinding, or polishing areas within a facility by installing a physical barrier	treatment plant any bath solution • Each spraying operation for removing excess chromic acid from parts removed from, and occurring over, an affected tank shall install a splash guard to minimize overspray during spraying operations and to ensure that any hexavalent chromium-laden liquid captured by the splash guard is returned to the affected chromium electroplating or anodizing tank • All buffing, grinding, or polishing operations that are located in the same room as chromium electroplating or chromium anodizing operations shall be separate from any affected electroplating or anodizing operation by installing a physical barrier

	tank number or other identifier, SCAQMD permit number, bath contents, maximum concentration (ppm) of hexavalent chromium, operating temperature range, any agitation methods used, and designation of whether it is a Tier I, Tier II, or Tier III Tank • Conduct all buffing, grinding, and polishing operations within a building enclosure. • Install a barrier to separate the buffing, grinding, or polishing within a facility from the chromium electroplating or chromic acid anodizing operation • Prohibit compressed air cleaning or drying operations within 15 feet of all Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s) unless: ○ A barrier separates those tanks from the compressed air cleaning or drying operations ○ Compressed air cleaning or drying operations are conducted in a permanent total enclosure		
Add-on Air Pollution	• Owner or operator of a facility that conducts	None Specified	None Specified

Control Devices and Emission Standards: Tier III Tank Requirements	chromium electroplating or chromic acid anodizing operations shall collect and vent all hexavalent chromium emissions from each Tier III Hexavalent Chromium Tank, excluding chromium electroplating and chromic acid anodizing tanks that meets the following emission limits: ○ For existing facilities, 0.0015 mg/amp-hr, if any tanks that are vented are electrolytic; or ○ For new facilities, 0.0011 mg/amp-hr, if any tanks that are vented are electrolytic; or ○ 0.20 mg/hr, if all tanks vented to the add-on air pollution control device are not electrolytic and the ventilation system has a maximum exhaust rate of 5,000 cfm or less; or ○ 0.004 mg/hr-ft^2, with the applicable surface area based on the tank surface area of		

	all Tier III Hexavalent Chromium Tank(s) and other tanks required to be controlled by SCAQMD Permit to Operate vented to an add-on air pollution control device, if the ventilation system has a maximum exhaust rate of greater than 5,000 cfm • Add-on air pollution control devices shall be installed by the owner or operator of a facility 12 months after a Permit to Construct has been issued by the Executive Officer or implement the alternative compliance method to meet the requirements for hexavalent chromium emission limits under subparagraph (h)(4)(A) based on the timeframe specified in the approved alternative compliance method; or no later than two years after approval, the owner or operator of a facility shall implement an approved Hexavalent Chromium Phase-Out		

	Plan pursuant to subdivision (u). • Beginning no later than [30 days after Date of Adoption], until the add-on air pollution control has been installed, cover the tank no later than 30 minutes after ceasing operation of the tank. Tank covers shall be free of holes, tears, and gaps and handled in a manner that does not lead to fugitive emissions. • The owner or operator shall not be subject to the requirement to vent a Tier III Hexavalent Chromium Tank to an add-on air pollution control device if the uncontrolled hexavalent chromium emission rate of the tank is less than 0.2 mg/hr as demonstrated by a source test and it is not a chromium electroplating or chromic acid anodizing tank.		
Add-on Air Pollution Control Devices and Emission Standards: Tier II Tank Requirements	• Beginning no later than [30 days after Date of Adoption], Tier II Tanks must utilize a tank cover, mechanical fume suppressant, or other emission control method approved by the Executive Officer.	None Specified	None Specified

	• Alternatively, the owner or operator of a facility may meet the Tier III Tank emission limit requirements		
Add-on Air Pollution Control Devices and Emission Standards: General	• An owner or operator of a facility that conducts chromium electroplating or chromic acid anodizing operations shall operate air pollution control techniques at the applicable minimum hood induced capture velocity.	None Specified	None Specified
Source Test Requirements: Schedule	• Owner or operator shall conduct the initial source test no later than 120 days after approval of the initial source test protocol • A source test conducted after January 1, 2015, may be used to demonstrate compliance with the initial source test. • Subsequent source tests are required to be conducted within 60 months of the most recent successful SCAQMD approved source test for facilities permitted for more than 1,000,000 ampere-hours per year • Subsequent source tests are required to be conducted within 84 months of the most recent successful	• Initial test required to demonstrate compliance with emission rate standards except for chromium electroplating or chromic acid anodizing tanks using wetting agent chemical fume suppressants for sole method of compliance	None Specified

	SCAQMD approved source test for facilities permitted for less than or equal to 1,000,000 ampere-hours • An owner or operator of facility that elects to meet an emission limit specified in paragraph (h)(2) using a certified wetting agent chemical fume suppressant or certified alternative wetting agent chemical fume suppressant shall not be subject to the requirements of subparagraph (k)(1)(A)		
Source Test Requirements: Emission Screening	• An emission screening of hexavalent chromium for a Tier III Hexavalent Chromium Tank may be alternatively conducted to comply with the requirements for subsequent source tests if the emissions screening test: o Follows a source test protocol previously submitted and approved by the SCAQMD o Consists of one run to evaluate the capture and control of hexavalent chromium emissions	None Specified	None Specified

	◦ Be representative of operating conditions at the facility • An emissions screening test of hexavalent chromium for a Tier III Hexavalent Chromium Tank may be conducted as an alternative to complying with the requirements for an initial source tests if: ◦ The emissions screening meets the requirements of clauses (k)(3)(A)(i) through (iii); ◦ The facility conducted a source test after January 1, 2009 that meets the requirements of clauses (k)(1)(C)(i) through (k)(1)(C)(iii) ◦ Submit to the Executive Officer a source test that requires approval to satisfy clause (k)(3)(B)(ii) no later than [30 days after Date of Rule Adoption] • The owner or operator shall submit to SCAQMD the results of the emission screening within 30		

	days of receiving the results
	• The owner or operator shall conduct a source test using an approved test method within 60 days of conducting an emission screening that:
	  ○ Fails the capture efficiency test(s) specified in the source test protocol;
	  ○ Exceeds an emission limit specified in the Permit to Operate;
	  ○ Exceeds an emission standard		

Source Test Protocol Submittal	• The owner or operator shall submit source test protocols for source tests based on the schedule below for air pollution control techniques existing on or before [Date of Adoption]
	• Facility Permitted >20,000,000 Amp-hrs
	  ○ Initial source test protocol due no later than [180 Days After Date of Adoption]
	  ○ 180 days prior to due date of subsequent source test
	• Facility Permitted <20,000,000 and >1,000,000
		None Specified	None Specified

	◦ Initial source test protocol due no later than [365 Days After Date of Adoption] ◦ 180 days prior to due date of subsequent source test • For new or modified air pollution control techniques after [Date of Adoption] ◦ Initial source test protocol due 60 days after initial start-up ◦ 180 days prior to due date of subsequent source test • Most recent SCAQMD approved source test protocol may be used for subsequent source tests if there are no changes since the last successful SCAQMD approved source test		
Capture Efficiency	• The owner or operator of a facility that is required to conduct a source test pursuant to subdivision (k) shall demonstrate that each add on-air pollution control device meets the design criteria and ventilation velocities specified in *A Manual of Recommended Practice for Design* authored by the American Conference of Governmental Industrial Hygienists	None Specified	None Specified

	or alternative design criteria and ventilation velocities approved by the Executive Officer.		
Smoke Test	• The owner or operator of a facility shall conduct a smoke test for each add-on air pollution control device pursuant to Appendix 5 and each add-on non-ventilated air pollution control device pursuant to Appendix 8. If an acceptable test is not conducted, the owner or operator shall shutdown all Tier II and Tier III Hexavalent Chromium Tanks associated with the add-on air pollution control device or add-on non-ventilated air pollution control device until an acceptable test is conducted.	None Specified	None Specified
Wetting Agent Chemical Fume Suppressants	• The owner or operator shall not add PFOS based fume suppressant to any chromium electroplating or chromic acid anodizing bath. • Surface tension shall be maintained below: ○ 40 dynes/cm (stalagmometer) ○ 33 dynes/cm (tensiometer) • Has been certified by the Executive Officer based on a	• Certify wetting agent chemical fume suppressants to achieve a surface tension level at which an emission factor of ≤ 0.01 mg/amp-hr is achieved. Wetting agent chemical fume suppressants must additionally meet a surface tension of < 45 dynes/cm (stalagmometer) or < 35 dynes/cm (tensiometer)	• After September 21, 2015, the owner or owner of an affected facility shall not add PFOS–based fume suppressant • If a chemical fume suppressant containing a wetting agent is used, the surface tension of the electroplating or anodizing bath shall not exceed: ○ 40 dynes/cm (stalagmometer)

	certification process conducted by SCAQMD and CARB		○ 33 dynes/cm (tensiometer)
Wetting Agent Chemical Fume Suppressants: Certification/ Phase Out	• No later than January 1, 2020, the Executive Officer shall notify the owner or operator of the following information: ○ Availability of a wetting agent chemical fume suppressant that is certified by the Executive Officer ○ Certification status of any potential wetting agent chemical ○ Beginning July 1, 2021, the owner or operator shall only add a certified wetting agent chemical fume suppressant to a electroplating or chromic acid anodizing tank that based on the information in the notice as specified in paragraph (l)(4) and ○ The owner or operator shall install and implement an air pollution control technique to meet the emission limits specified in Table 1 – Hexavalent Chromium Emission Limits for Hard Decorative Chromium Electroplating and	None Specified	None Specified

	Chromic Acid Anodizing Tanks no later than July 1, 2021, or phase-out the use of hexavalent chromium no later than July 1, 2022, or implement an alternative to a wetting agent chemical fume suppressant ○ An owner or operator that elects to phase out hexavalent chromium shall submit no later than January 1, 2021, a written and signed commitment that the facility will phase out by July 1, 2022, the use of hexavalent chromium in the electroplating or chromic acid anodizing tank that uses a wetting agent chemical fume suppressant and cease operating and surrender SCAQMD Permits to Operate for the chromium electroplating or chromic acid anodizing tank(s) no later than July 1, 2022 ○ The alternative to a chemical fume suppressant shall meet an emission limit that is equally effective as the emission limit required for a chemical fume		

	suppressant, be approved by the Executive Officer, and be used in accordance with the approval ○ Owner or operator that fails to phase out the use of hexavalent chromium by July 1, 2022 will be required to cease operation of the electroplating or chromic acid anodizing until it can meet the emission limits		
Parameter Monitoring: Pressure Air Flow	• The owner or operator shall monitor the operation of the add-on air pollution control device by: ○ Installing and maintaining a device to measure the applicable pressures and air flows specified in Table 4 ○ Installing each device so that it is accessible and in clear sight of the operation or maintenance personnel; ○ Maintaining all parameters identified in Table 4 within the range specified in the facility's SCAQMD Permit to Operate; ○ Labeling each mechanical gauge with the	None Specified	None Specified

	corresponding acceptable operating ranges established during the most recent source test and within the range specified in the SCAQMD Permit to Operate; and ○ Maintaining the mechanical gauges in accordance to the requirements in Appendix 4 • The owner or operator shall measure the velocity of all collection slots and if applicable, the pressure of the push manifold, or alternate location based on the source test every 180 days		
Parameter Monitoring: Pressure and Air Flow	• Monitor the operation of the add-on air pollution control device by installing and maintaining mechanical gauges to measure the applicable pressures and air flows at the: ○ Push Manifold – Static Pressure ○ Collection Manifold/Any Location within the System – Static Pressure/Volumetric Flow Rate ○ Across Each Stage of the Control Device –	• Continuous pressure drop and inlet velocity monitoring • Record once a week	• Daily pressure drop and inlet velocity monitoring and recording

	Differential Pressure		
Add-On Air Pollution Control Device Parameter Monitoring	• Monitoring required of collections slots and push air manifold • Acceptable measurements and actions: ○ Collection Slot, > 95% of the most recent passing source test or emission screening; or ≥ 2,000 fpm ○ Push Air Manifold,95-105% compared to the most recent passing source test or emission screening ○ Action required, none • Repairable measurement and actions: ○ Collection Slot, 90-95% of the most recent passing source test or emission screening test, or < 2,000 fpm and > 1,800 fpm ○ Push Air Manifold, 90-95% or 105-110% of the most recent passing source test or emission screening test ○ Action required, repair • Failing Measurement and actions:	None Specified	None Specified

	○ Collection Slot, < 90% of the most recent passing source test or emission screening test, or <1,800 fpm ○ Push Air Manifold, > 110% or < 90% of the most recent passing source test or emission screening test ○ Action required, immediately shut down tanks controlled by the add-on air pollution control device that had a failing measurement • An owner or operator that is required to shut down a tank controlled by an add-on air pollution control device due to a failing measurement shall demonstrate that the collection slot velocity and push air manifold are within acceptable measurement before operating the tank		
Parameter Monitoring: Velocity of Collection Slots	• Every 180 days demonstrate that emissions are captured by the add-on air pollution control device that meets the requirements in Table 5 using: ○ A hot-wire anemometer;	None Specified	None Specified

	○ A vane anemometer; or ○ A device or method approved by the Executive Officer		
Parameter Monitoring: HEPA Filters	• Beginning 60 Days after completion of the initial source test, air pollution control devices equipped with HEPA filters shall be: ○ Equipped with ports ○ Calibrated once every calendar year ○ Maintained in accordance with manufacturer specification	None Specified	None Specified
Parameter Monitoring: Surface Tension	• If using a certified chemical fume suppressant, the surface tension shall be measured daily for 20 operating days, and every third operating day thereafter, but no less than once weekly.	• Monitor and record surface tension of electroplating baths weekly.	• Monitor and record surface tension of electroplating baths once every 40 hours of operation.
Inspection and Maintenance and Operation and Maintenance Plan	• Tier II Hexavalent Chromium Tanks that are not controlled by an add-on air pollution control device shall comply with the applicable inspection and maintenance requirements in Table 4-3 of Appendix 4 • Tier I, Tier II, and Tier III Hexavalent Chromium Tanks shall comply with the inspection and maintenance	None Specified	None Specified

	requirements in Table 4-2 of Appendix 4 • Facility's Operation and Maintenance Plan shall be revised to reflect the incorporation of new inspection and maintenance requirements for a device or monitoring equipment • Prior to replacing an ampere-hour meter the owner or operator shall document with a photograph the actual ampere-hour reading of: ○ The ampere-hour meter being replaced; ○ The new ampere-hour meter after installation		
Reporting of Notification of Incidents	• Notify the Executive Officer within four hour of the incident or within four hours of any failed smoke test, any failed source test, any exceedance of a permitted ampere-hour limit, or any malfunction of a non-resettable ampere-hour meter. The notification shall include. ○ Date and time of the incident ○ Specific location and equipment involved ○ Responsible party to contact	None Specified	None Specified

	for further information ○ Causes of the incident ○ Estimated time of repair		
Chromium Electroplating or Chromic Acid Anodizing Kit Requirements	Removed	• No person shall sell, supply, offer for sale, or manufacture for sale in California, chromium electroplating or chromic acid anodizing kits unless to an owner or operator of a permitted facility at which chromium electroplating and chromic acid anodizing is performed.	None Specified
Conditional Requirements for Permanent Total Enclosures: Triggers	• More than one non-passing source test within a 48-month period • More than one failure to cease operating a tank controlled by an add-on air pollution control device within a 48-month period due to a failing measurement of the collection system or a failed smoke test, if the facility is greater than 1,000 feet of a sensitive receptor • One failure to cease operating a tank due to a failing measurement of the collection system or a failed smoke test, if the facility is less than or	None Specified	None Specified

	equal to 1,000 feet of a sensitive receptor		
Conditional Requirements for Permanent Total Enclosure: Procedure to Contest	• Within 30 days submit a written report providing evidence that the installation of a PTE is not warranted based on: ○ Incidences did not occur ○ Owner or operator resolved incidences in a timely manner ○ Implemented specific measures to minimize hexavalent chromium emissions	None Specified	None Specified
Conditional Requirements for Permanent Total Enclosure: Construction	• Install no later than 12 months after the Permit to Construct • Permit to Construct application due 180 days after notification by the Executive Officer if near sensitive receptor • Permit to Construct application due 270 days after notification by the Executive Officer for other facilities	None Specified	None Specified
Hexavalent Chromium Phase-Out	• Tier II or Tier III Hexavalent Chromium Tank shall not be required to vent to an add-on air pollution control if the owner or operator submits a Hexavalent Chromium Phase-Out Plan that contains:	None Specified	None Specified

	- A written commitment to eliminate or reduce hexavalent chromium concentrations to below the Tier II or Tier III concentrations; - A description of the method by which hexavalent chromium concentrations will be reduced or eliminated; - A list of milestones that are necessary to occur in order for the facility to eliminate or reduce hexavalent chromium; - Completion date for each milestone; - List of all control measures that will be implemented • The Executive Officer shall notify if the plan is approved or disapproved • Upon approval of the Hexavalent Chromium Phase-Out Plan, the owner or operator shall implement the approved plan and submit a progress report to the Executive		

	Officer by the 1st of each quarter		
Time Extensions	• An owner or operator of a facility may submit a request to the Executive Officer for a one-time extension for up to 12 months to: ○ Complete installation of an add-on air pollution control device, implement an approved alternative compliance method, or implement an approved Hexavalent Chromium Phase-Out Plan to meet the requirements; or ○ Meet the hexavalent chromium emission limit, phase-out the use of hexavalent chromium, or implement an alternative to a wetting agent chemical fume suppressant; • An owner or operator of a facility that elects to submit a request for a time extension shall submit the request no later than 90 days before the compliance deadline specified in subparagraph	None Specified	None Specified

	(h)(4)(C) or paragraph (l)(5) and provide: ○ The facility name, SCAQMD facility identification number, and the name and phone number of a contact person; ○ A description of the chromium electroplating or chromic acid anodizing tank and the SCAQMD Permit to Operate and tank number; ○ A description of the emission reduction approach that is being implemented; ○ The specific provision under subparagraph (h)(4)(C) or paragraph (l)(5) for which a compliance extension is being requested; ○ The reason(s) a time extension is needed; ○ Progress in meeting the provisions in subparagraph (h)(4)(C) or paragraph (l)(5) including but not limited to date permit		

	application was submitted to the SCAQMD, date Permit to Construct was approved, purchase order of equipment, date of service of contractors or consultants to install equipment; and ○ Length of time requested, up to 12 months. • The Executive Officer will review the request for the time extension and will approve the time extension if the owner or operator: ○ Demonstrates that there are specific circumstances beyond the control of the owner or operator that necessitate additional time to meet the compliance dates specified under subparagraph (h)(4)(C) and paragraph (l)(5); and ○ The demonstration is substantiated with information that includes, but is not limited to detailed		

	schedules, engineering designs, construction plans, permit applications, purchase orders, economic burden, and technical infeasibility.		

REFERENCES

Air Pollution Control Technology Fact Sheet: Fabric Filter HEPA and ULPA Type. (2000, December). Retrieved from https://www3.epa.gov/ttncatc1/dir1/ff-hepa.pdf

AP 42, Fifth Edition, Volume I Chapter 12: Metallurgical Industry - Electroplating. (1996, July). Retrieved from https://www3.epa.gov/ttn/chief/ap42/ch12/final/c12s20.pdf

Bibber, J. W. (2001). An overview of nonhexavalent chromium conversion coatings—Part I: Aluminum and its alloys. Metal Finishing, 99(12), 15-22. doi:10.1016/s0026-0576(01)81711-6

Budroe, J. (2017, June 30). Toxicity of the Fume Suppressant Sodium Diamyl Sulfosuccinate [Letter to Robert Krieger].

California Adds Perfluorooctanoic Acid PFOA Perfluorooctane Sulfonate PFOS to Proposition 65 List Continuing Trend. Retrieved from http://www.bicklawllp.com/our-insights/california-adds-perfluorooctanoic-acid-pfoa-perfluorooctane-sulfonate-pfos-proposition-65-list-continuing-trend-increased-regulation-perfluori

California Air Resources Board. (2006). *Staff Report: Initial Statement of Reasons for Proposed Amendments to the Hexavalent Chromium Airborne Toxic Control Measure for Chrome Plating and Chromic Acid Anodizing Operations*.

California Air Resources Board. (2006). *Final Statement of Reasons for Rulemaking Including Summary of Comments and Agency Responses – Public Hearing to Consider Proposed Amendments to the Hexavalent Airborne Toxic Control Measure for Chrome Plating and Chromic Acid Anodizing Operations.*

California Air Resources Board. (2007). *Final Regulation Order – Airborne Toxic Control Measure for Chromium Plating and Chromic Acid Anodizing Facilities.*

Chrome Plating Device Eliminates Emissions. (1999, November 5). Retrieved from https://www.surfacefinishing.com/doc/chrome-plating-device-eliminates-emissions-0001

Fume Suppressant Fact Sheet. Retrieved from https://www.arb.ca.gov/toxics/chrome/fumesuppressantfactsheet.pdf

Fume Suppressant List Final. Retrieved from https://www.arb.ca.gov/toxics/chrome/fumesuppresslistfinal9.21.16.pdf

Hao, L., & Cheng, B. R. (2000). Sealing processes of anodic coatings—Past, present, and future. Metal Finishing, 98(12), 8-18. doi:10.1016/s0026-0576(01)80002-7

Hard Chrome Fume Suppressants and Control Technologies. (1998, December). Retrieved from https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=30004S57.TXT

Industrial ventilation: A manual of recommended practice. (2004). Lansing, MI: American Conference of Governmental and Industrial Hygienists.

Industrial ventilation: A manual of recommended practice for design. (2013). Cincinnati, OH: American Conference of Governmental and Industrial Hygienists.

Non PFOS Permanent Mist Suppressants for Hard Chromium Plating, Decorative Chromium Plating, and Chromium Etch Application. Retrieved from https://www.pfonline.com/articles/non-pfos-permanent-mist-suppressants-for-hard-chromium-plating-decorative-chromium-plating-and-chromic-etch-applications

Paulson, K, Matzdorf C, and Scwartz S (March 2004). *Final Report for the Use of Wetting Agents/Fume Suppressants for Minimizing the Atmospheric Emissions from Hard Chromium Electroplating Baths*, Arlington, VA: Environmental Security Technology Certification Program.

Pokorny, P., Tej, P. I Szelag, P. (2016). Chromate conversion coatings and their current application. *Metalurgija*, *55* (2), 253-256, retrieved from https://hrcak.srce.hr/146687

Polo, Chen, (October 2002). *Report on Nickel and Chromium Emissions from Electroplating Tanks, Version 3.0*

Risk Management for Per- and Polyfluoroalkyl Substances (PFASs) under TSCA. Retrieved from https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-management-and-polyfluoroalkyl-substances-pfass

Roberts, R. (n.d.). *Air Pollution Control Technology*. Spartanburg, SC: Greene Engineering.

Silva, R. M. (2015). *6:2 Flurotelomer Sulfonate (FTS/FTSA) and Perfluorohexanoic Acid (PFHxA) Toxicity Review* (Office of Environmental Health Hazard Assessment). Sacramento, CA: OEHHA.

Silva, R. M. (2015). *Summary of Reproductive and Developmental Effects of Perfluorohexane Solfonate (PFHxS)* (Office of Environmental Health Hazard Assessment). Sacramento, CA: OEHHA.

Silva, R. M. (2016). *6:2 Fluorotelomer Alcohol (FTOH) Toxicity Review (Office of Environmental Health Hazard Assessment)*. Sacramento, CA: OEHHA.

Substitution of PFOS for use in non-decorative hard chrome plating. Retrieved from https://www2.mst.dk/udgiv/publications/2011/06/978-87-92779-10-6.pdf

South Coast Air Quality Management District. (2005). *Risk Assessment Procedures for Rules 1401 and 212, Version 7.0*.

South Coast Air Quality Management District. (2003). *Staff Report, "Proposed Amended Rule 1469 Hexavalent Chromium Chrome Plating and Chromic Acid Anodizing and Proposed Rule 1426 Emissions From Metal Finishing Operations"*.

South Coast Air Quality Management District. (2008). *Staff Report, "Proposed Amended Rule 1469 Hexavalent Chromium Chrome Plating and Chromic Acid Anodizing Operations"*.

Toxic Use Reduction Institute (2012). *Independent Plating Case Study: Converting to Trivalent Chromium*.

U.S. Environmental Protection Agency. (2012). *Code of Federal Regulations Part 63, Subpart N. National Emission Standards for Hazardous Air Pollutants – Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Operations*.

APPENDIX A: RESPONSE TO COMMENTS

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MFASC
METAL FINISHING ASSOCIATION OF SOUTHERN CALIFORNIA, INC.

MFANC
METAL FINISHING ASSOCIATION OF NORTHERN CALIFORNIA, INC.

NASF
NATIONAL ASSOCIATION FOR SURFACE FINISHING

CALIFORNIA Small Business Alliance

September 18, 2017

Mr. Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91765

Re: Comments - Proposed Amended Rule 1469 Working Group Meeting #5

Dear Mr. Nastri:

The Metal Finishing Associations of California ("MFA") represents over 130 companies throughout Northern and Southern California, which comprise a diverse industrial base of metal finishing and related businesses that employ thousands of workers. Its members provide necessary products and services to manufacturers in various other industries, including aerospace, automotive, electronics, computers, smart phones, medical devices, energy, and other consumer and industrial products. A large segment of our membership also provides mission critical parts and components for military aircraft, satellites, telecommunications, and other defense applications. In addition, well over 90 percent of the MFA membership are family-owned, small businesses.

Joining MFA in these comments are the National Association of Surface Finishing and the California Small Business Alliance.

Located in Washington DC, NASF represents the interests of businesses, technologists and professionals in the surface coatings industry. Its highly regarded programs and activities are informed by NASF's mission to advance an environmentally and economically sustainable future for the finishing industry; and promote the vital role of surface technology in the global manufacturing value chain.

The California Small Business Alliance is a non-partisan coalition of California trade associations committed to provide small businesses with a single constructive voice before air quality management districts and other environmental regulatory agencies. While Alliance members represent small businesses, the combined impact of the membership on society and the economy is enormous. For example, in the Los Angeles metropolitan region alone, membership in the Alliance has grown to represent 14,000 companies, 700,000 employees and $42 billion in shipments.

Representatives of the MFA, including legal counsel and technical experts, have been actively engaged with AQMD staff since the beginning of the recent rulemaking process earlier this year. MFA members and its representatives have also attended all five public working group meetings, including the most recent meeting held on August 31, 2017 (referred to as "Working Group Meeting #5"), plus participated in numerous other meetings with the AQMD's legal counsel, economic experts and rule development staff. This comment letter addresses the information presented by the staff at Working Group Meeting #5, noted as follows:

1.0 AQMD TESTING DATA

At the recent working group meeting, the AQMD presented a summary of test data collected from its various enforcement activities, including liquid, air and swipe samples of process areas and metal finishing tanks. In general, the MFA remains concerned that major rulemaking and policy decisions are being based on relatively few and inconsistent data points, especially when it concerns a potential requirement of add-on control devices and other costly measures for currently unregulated tanks. While the MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, at this time, the following summarizes our primary concerns and comments based on data presented thus far: 1-1

(1) Sodium Dichromate and Dilute Chromate Tanks – On page 13 of the AQMD presentation, test results were shown of three (3) air samples of sodium dichromate seal tanks taken from three (3) different facilities (Facility C, D and E). The tank sizes ranged from 12 to 32 square feet, and operating temperatures ranged up to 212° F. Of the three air samples presented, there was a wide range of results from 97,200 to 682,000 ng/m^3, which were sampled approximately 6 inches above the liquid surface of fully heated tanks without air sparging. Based on our review, there are inconsistencies with the sampling data as the measured air concentrations do not necessarily correlate to the hexavalent chromium concentrations within the tank. In addition, only 2 of the 3 measured facilities had valid analysis of the tank contents (Facility D and E). Of these 2 examples, the air sample concentrations of Facility D were over two times higher than Facility E, even though the hexavalent chromium concentration in the tank solution were approximately 60 percent of Facility E. While general qualitative judgements may be speculated based on this limited data, it is difficult to draw any specific conclusions or correlations given only two data points, and inconsistencies amongst these data points. 1-2

Moreover, it has not been demonstrated that potential fugitives from such tanks are being fully exhausted from building enclosures, nor that add-on controls are necessarily required. In response to a question during the workshop, an AQMD source test manager indicated that the same level of hexavalent chromium measured near the tank liquid surface were not being observed at the rooftop vents at these tested facilities. Rather, rooftop concentrations were substantially lower by orders of magnitude. In our view, if the tanks are properly maintained in buildings with open rooftop vents located at a sufficient distance away from such tanks, the likelihood of fugitives discharged from affected facilities would be sufficiently limited. As a consequence, the MFA would generally support housekeeping and best management practices as being sufficient measures to control sodium dichromate seal tanks.

(2) Nickel Acetate Seal, Hot Water and Teflon Seal – On page 14, test results were shown of four (4) liquid samples of nickel acetate, one (1) liquid sample of DI water seal and one (1) liquid sample of teflon seal tank. The tank sizes ranged from 4.5 to 30 square feet. Based on the presented test data, hexavalent chromium concentrations in these tank solutions were less than 1 ppm or non-detect in all cases, except for teflon seal tank which was measured at 5 ppm. In our view, these types of tanks do not require any further regulatory action nor other control measures. 1-3

(3) Chromate Conversion and Dye Tanks – On page 15, test results were shown for one (1) air sample of a chromate film tank (Facility D), which indicated a near surface concentration of 8,340 ng/m^3. In addition, two (2) liquid samples from two (2) chem film tanks (Facility C and G), which measured at 4 and 2,880 ppm, respectively. There was also one (1) liquid sample from an alodine clear tank (Facility F), which measured 300 ppm. Lastly, there was six (6) liquid samples from different color dye tanks (Facility C and F), in which hexavalent chromium concentrations were less than 1 ppm or non-detect in all cases, with exception of two tanks that measured 2 and 8 ppm, respectively. In our view, all of these tank types do not require any further regulatory action nor other control measures. 1-4

(4) Rinse, Cleaner and De-smut Tanks – On page 16, test results were shown for five (5) liquid samples of standard rinse tanks (Facility B, C and F), in which hex chrome concentrations were less than 4 ppm in all cases, with exception of one anomalous tank. In addition, there were three (3) liquid samples from DI rinse tanks (Facility A, F and G), in which hex chrome concentrations measured less than 0.25 percent by weight, respectively. Lastly, there were three (3) liquid samples from two cleaner tanks and one de-smut tank, in which hex chrome concentrations were less than 0.001 percent by weight. In our view, these types of tanks do not require any further regulatory action nor other control measures. 1-5

(5) Passivate, Etch, Neutralizer and Stripping – On page 17, test results were shown for one (1) liquid samples taken from tanks that performed stripping, passivation, passivate rinse, etch and acid neutralizer, respectively. Hexavalent chromium concentrations from these tank solutions were less than 0.021 percent by weight in all tanks, with the exception of the passivation and stripping tank which measured 10,000 and 47,400 ppm, respectively. In the latter cases, neither the tank surface air concentrations nor tank operating temperatures were recorded or measured. However, the MFA would generally support housekeeping and best management practices as being sufficient measures to control these tanks. 1-6

2.0 PROPOSED RULE STRUCTURE

At this latest meeting, the AQMD presented a proposed rule structure and proposed rule language for certain sections, which included rule applicability, definitions, general requirements, housekeeping and best management practices (BMPs). In general, the MFA is supportive of the proposed rule structure, as presented at the last working group meeting. While the MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, the following summarizes our primary comments at this time:

(1) Ambient Air Monitoring – The AQMD indicated that ambient air monitoring would be considered in a separate rulemaking which could impact multiple industries, and therefore, would not be proposing such requirements in the amended Rule 1469. The MFA remains concerned about the use of ambient air monitoring (and fence line limits) for rulemaking and enforcement purposes.

MFA reiterates it request in Workshop #5 that, prior to the inclusion of air monitoring provisions in any newly amended rules, the District consider the recently-enacted AB 617 [Garcia] Chapter 136, Statutes of 2017 and work with the California Air Resources Board [CARB] to implement the requirements of that law. 1-7

The new law requires CARB, by October 1, 2018, to prepare a monitoring plan regarding technologies for monitoring criteria air pollutants and toxic air contaminants and the need for and benefits of additional community air monitoring systems. It also requires CARB to select locations around the state for the preparation of community emissions reduction programs, and requires an air district containing a selected location, within one year of the state board's selection, to adopt a community emissions reduction program. By increasing the duties of air districts, this bill would impose a state-mandated local program. 1-7 (cont'd)

It is important that implementation of these new laws with statewide application occurs without a duplication of efforts, and with a mind to the costs versus benefits.

(2) Tier I and Tier II Hexavalent Chromium Tanks – The MFA supports the concept of a Tier I and II hex chrome tanks for regulatory purposes. However, the MFA is still reviewing potential hexavalent chromium concentration, temperature and other limits which could define these categories. Irrespective, based on our review of the test data presented to date (and as noted above), the MFA believes most of the tank categories will not require further controls or other regulatory action. In cases of other potential applicable tanks, the MFA does not anticipate that add-on controls will be necessary, but rather housekeeping and BMPs would be sufficient control measures under the amended rule. 1-8

(3) Housekeeping – The MFA supports housekeeping measures for applicable tanks under the amended rule with few exceptions. However, the MFA does not support daily cleaning of applicable tanks, as currently proposed in PAR Rule 1469 (f)(4), as this places an undue burden on metal finishers. The current cleaning requirement is once per week, which we believe is sufficient housekeeping. In addition, the AQMD is proposing a new cleaning requirement under PAR Rule 1469 (f)(7) which requires the cleaning, using an approved cleaning method, of "suspected chromic acid residue" within 24 hours, such as visible stains. The MFA opposes this additional cleaning method as this would place an undue burden on metal finishing facilities, and also open to wide interpretation for enforcement officers in the issuance of Notices of Violations. 1-9

(4) Best Management Practices – The MFA supports BMPs for applicable tanks under the amended rule with few exceptions. Regarding the proposed limitations on using water sprays as currently proposed in PAR Rule 1469 (g)(2), the MFA does not believe such limitations are necessary. Given the water spray typically occurs over rinse tanks, and that neither the parts nor rinse tank will have significant amounts of chrome laden liquid. 1-10

(5) Permanent Total Enclosures (PTEs) – The AQMD is considering a trigger for PTEs for both Tier I and II chrome tanks based on (a) failure of a source test twice within 36 months; or (b) failure to correct deficient slot velocity measurements within a specified time period. In general, the MFA does not believe that PTEs are necessary to control potential Tier I or II tanks, as we anticipate housekeeping and BMPs would be sufficient control measures. In addition, equipment source testing can be very costly, especially for facilities with many regulated tanks or permit units. As a consequence, the MFA is concerned about repetitive source testing requirements, which are unnecessary for compliance purposes. In addition, as we have noted before, the use of PTEs can also be very costly and difficult to implement, especially for facilities that were not designed nor constructed to accommodate them for existing tank operations. 1-11

The MFA also strongly encourages the AQMD to consider the ongoing confirmation that the provisions in the proposed rule update that are of concern to MFA are not necessary. This is documented by the results AQMD has obtained through its extensive hexavalent chromium monitoring in Compton, obtained from 36 separate sampling dates, beginning on June 30 of this year, and now involving seven sites. 1-12

The MFA and its representatives look forward to continued discussions on the amended rule with the AQMD. Thank you and we look forward to your response.

Sincerely,

Wesley Turnbow

Wesley Turnbow
President

cc: Barry Groveman, Musick Peeler
Ryan Hiete, Musick Peeler
Susan Nakamura, SCAQMD (via email only)
Kurt Wiese, SCAQMD (via email only)

Responses to Metal Finishing Association of Southern California (MFASC) Comment Letter, submitted 9/18/17

1-1 Response: Since this comment was submitted, additional source testing of tanks that operate between 140 and 170 degrees have been conducted. Using these additional data points combined with previous tank source tests, the SCAQMD staff has developed a table based on concentration thresholds that are based on source test data, with input from industry representatives that further refines the tiers of tanks by adding three tiers of tanks, in order to incorporate provisions for an interim "Tier II Tank" where emission reductions strategies are needed, but not add-on pollution controls.

1-2 Response: Please see response to comment 1-1. Regarding the comment on fugitive emissions escaping from the building enclosure, ambient monitoring and sampling at metal finishing facilities in Newport Beach, Paramount and Long Beach have shown elevated levels of hexavalent chromium that were attributed to cross-drafts that allowed hexavalent chromium emissions to exit the building enclosure and hexavalent chromium emitting tanks that are currently not regulated under Rule 1469. Hexavalent chromium emissions were substantially reduced after operators closed building openings including rooftop vents that allowed emissions to be emitted out of the building, demonstrating the need to establish operating parameters for building enclosures. Regarding the comment on the difference in sampled concentrations, SCAQMD staff does not have the tank concentrations, nor specific operating temperatures which would affect the sampled concentrations. While there is variability between the sampled results, all 3 sampled concentrations were more than 10 times the measured concentration of a chromic acid anodizing tank controlled by chemical fume suppressant.

1-3 Response: Based on the tanks that staff has observed, the tanks referenced in the comment are all considered to be either Tier I Tanks or associated process tanks and do not have control requirements under PAR 1469, except for housekeeping and the requirement to operate Tier I Tanks inside a building. It is the responsibility of the owner or operator to assess the operating parameters (temperature and hexavalent chromium concentration) of a tank and then determine if the tank is a Tier I, II, or III Hexavalent Chromium Tank.

1-4 Response: Based on the tanks that staff has observed, the tanks referenced in the comment are all considered to be Tier I tanks and do not have control requirements under PAR 1469, except for housekeeping and the requirement to operate Tier I tanks inside a building. It is the responsibility of the owner or operator to assess the operating parameters (temperature and hexavalent chromium concentration) of a tank and determine if the tank is a Tier I, II, or III Hexavalent Chromium Tank.

1-5 Response: Based on the tanks that staff has observed, the tanks referenced in the comment are all considered to be associated process tanks, with the possible exception of rinse tanks that can build up concentrations of hexavalent chromium above Tier I allowable concentrations. Tier I Tanks only have housekeeping requirements and are required to be operated within a building. It is the responsibility of the owner or operator to assess the operating parameters (temperature and hexavalent chromium concentration) of a tank and determine if the tank is a Tier I, II, or III Hexavalent Chromium Tank.

1-6 Response: Based on the tanks that staff has observed, the tanks referenced in the comment are all considered to be Tier I Tanks, with the possible exception of electrolytic stripping tanks that can be Tier III Tanks, unless the tank meets the temperature and hexavalent chromium concentrations of a Tier I or II Tank. Tier III Tanks have control requirements under the rule proposal. It is the responsibility of the owner or operator to assess the operating parameters (temperature and hexavalent chromium concentration) of a tank and determine if the tank is a Tier I, II, or III Hexavalent Chromium Tank.

1-7 Response: SCAQMD staff has initiated rule development for Proposed Rule (PR) 1480 – Air Toxic Metals Monitoring which will provide a comprehensive approach to monitoring air toxics metals at various communities near a variety of industries. Therefore, it is more appropriate to consider monitoring within the context of PR 1480 instead of within PAR 1469.

Staff understands the requirements of AB 617 and will work with all stakeholders during development of PR 1480.

1-8 Response: Tier I Tanks are subject to housekeeping requirements under the rule proposal. Tier II Tanks and Tier III Tanks (formerly Tier II Tanks) must meet emission limits that require installation of air pollution controls. In general, best management practices apply to Tier II and II Tanks, and there are labeling requirements for Tier I, II, and III Tanks.

1-9 Response: The housekeeping provision under paragraph (f)(4) has been modified to read: *Clean, using an approved cleaning method, surfaces within the enclosed storage area, open floor area, walkways around the electroplating or anodizing tanks, or any surface potentially contaminated with hexavalent chromium or surfaces that potentially accumulate dust at least weekly*. This language exists in the current version of Rule 1469. Regarding the comment about visible stains, the language pertaining to "suspected chromic acid residue" in an earlier proposal has been removed.

1-10 Response: The requirement for water spraying/rinsing has been modified to require that *the owner or operator shall not spray rinse parts or equipment that were previously in a Tier II or Tier III hexavalent chromium tank, unless the parts or equipment are fully lowered inside a tank where the liquid is captured inside the tank.* Please refer to paragraph (g)(2) for more information regarding water spray rinsing requirements.

1-11 Response: The triggers to require a permanent total enclosure (PTE) have been modified such that the timing is based on 48 months rather than 36 months. The triggers that will require a PTE are included in subdivision (t):

- More than one non-passing source test within a consecutive 48 month period; or
- The owner or operator of a facility failed to meet the requirements to shut down a tank controlled by an add-on air pollution control device more than once within a consecutive 48-month period for a facility that is located more than 1,000 feet from a sensitive receptor; or
- The owner or operator of a facility failed to meet the requirements to shut down a tank controlled by an add-on air pollution control device once for a facility that is located less than or equal to 1,000 feet from a sensitive receptor.

PAR 1469 allows a facility to contest the PTE requirement. The owner or operator is allowed to contest the requirement to install a permanent total enclosure within 30 days of receiving notification from the Executive Officer that the requirement had been triggered. A written report contesting the requirement must include evidence that installation of the permanent total enclosure is not warranted based on the several criteria:

- The specified incidents of non-compliance did not occur; or
- The owner or operator of a facility resolved the specified incidents of non-compliance in a timely manner; and
- The owner or operator of a facility implemented specific measures to minimize the hexavalent chromium emissions.

1-12 Response: PAR 1469 is necessary. Ambient monitoring in Compton near Rule 1469 facilities was initiated after ambient monitoring efforts near Rule 1469 facilities in Newport Beach, Paramount, and Long Beach were conducted. Facilities in Compton had the benefit of learning about tanks that were potential high hexavalent chromium emitters and the importance of building enclosures. PAR 1469 is needed to require pollution controls on tanks with potentially high hexavalent chromium emissions, such as heated sodium dichromate seal tanks. PAR 1469 also establishes needed requirements to minimize cross-drafts from buildings with Rule 1469 hexavalent chromium tanks and housekeeping and best management practices. These provisions have been instrumental in reducing hexavalent chromium emissions near the Rule 1469 facilities in Newport Beach, Paramount, and Long Beach.

Throughout the rulemaking process, the SCAQMD staff has worked with the Metal Finishing Association of Southern California on a variety of provisions to allow more flexibility, ensure provisions are enforceable, provide additional clarity, and remove unnecessary provisions.

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MFANC
METAL FINISHING ASSOCIATION
OF NORTHERN CALIFORNIA, INC.

NASF
NATIONAL ASSOCIATION FOR SURFACE FINISHING

California Small Business Alliance

October 12, 2017

Mr. Wayne Nastri, Executive Officer
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91765

Re: Comments – Proposed Amended Rule 1469 Working Group Meeting #6

Dear Mr. Nastri:

The Metal Finishers Associations of California ("MFA") represents over 130 companies throughout Northern and Southern California, which comprise a diverse industrial base of metal finishing and related businesses that employ thousands of workers. Its members provide necessary products and services to manufacturers in various other industries, including, aerospace, automotive, electronics, computers, smart phones, medical devices, energy, and other consumer and industrial products. A large segment of our membership also provides mission critical parts and components for military aircraft, satellites, telecommunications, and other defense applications. In addition, well over 90 percent of the MFA membership are family-owned, small businesses.

Joining the MFA in these comments are the National Association of Surface Finishing ("NASF") and the California Small Business Alliance.

Located in Washington DC, NASF represents the interests of businesses, technologists and professionals in the surface coatings industry. Its highly regarded programs and activities are informed by NASF's mission to advance an environmentally and economically sustainable future for the finishing industry; and promote the vital role of surface technology in the global manufacturing value chain.

The California Small Business Alliance is a non-partisan coalition of California trade associations committed to provide small businesses with a single constructive voice before air quality management districts and other environmental regulatory agencies. While Alliance members represent small businesses, the combined impact of the membership on society and the economy is enormous. For example, in the Los Angeles metropolitan region alone, membership in the Alliance has grown to represent 14,000 companies, 700,000 employees and $42 billion in shipments.

Representatives of the MFA, including legal counsel and technical experts, have been actively engaged with AQMD staff since the beginning of the recent rulemaking process earlier this year. MFA members and its representatives have also attended all six public working group meetings, including the most recent meeting held on September 20, 2017 (referred to as "Working Group Meeting #6"), plus participated in numerous other meetings with the AQMD's legal counsel, economic experts and

P.O. Box 6547, Burbank, CA 91510-6547 (818) 238-9590 www.mfaca.org

rule development staff. This comment letter addresses the information presented by the staff at Working Group Meeting #6, noted as follows:

1.0 GENERAL COMMENTS

At Working Group Meeting #6, the AQMD presented proposed draft rule language for PAR 1469 and a summary presentation of the staff proposal. While the MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, at this time the following summarizes our primary concerns and comments based on data presented thus far:

(1) New Source Review – As explained during the prior workshop, the MFA is concerned with the applicability of New Source Review ("NSR") per AQMD Rule 1303 (criteria pollutants) and Rule 1401 (air toxics) for facilities seeking to implement the proposed amended rule. NSR generally applies to "new permit units, relocations, or modifications to existing permit units." If triggered, permit applications and agency fees could range up to $3,000 per permit unit/application. In addition, in the case of Rule 1401 the permit applicant must demonstrate compliance with an increased Maximum Individual Cancer Risk ("MICR") of 1 in 1 million, or 10 in 1 million with use of T-BACT, which could mean the preparation of expensive Health Risk Assessment ("HRA") reports that range up to $25,000 each. Further, permit applications could take months or years awaiting AQMD review, approval and final permit issuance.

There are many examples of facility actions that may be construed as a "modification" or otherwise trigger NSR. A few examples of Best Management Practices ("BMPs"), housekeeping and other control measures under PAR 1469 which may trigger NSR are (a) relocating tanks farther away from roof vents, (b) installing covers to existing tanks, (c) adding polyballs or other mechanical fume suppression, (d) replacing air sparging with mechanical agitation, (e) installing or upgrading pressure gauges, flowmeters or other required monitoring devices, or (f) installing a total enclosure around existing tanks. Moreover, NSR could also apply if the AQMD denies potential NSR exemptions for submitted permit applications, including Rule 1401(g)(1)(B) and (C) for "Modifications with No Increase in Risk" and "Equipment Previously Exempted Under Rule 219", respectively. NSR applicability could incur significant permitting costs as noted above, plus create considerable delays in implementing PAR 1469 emission reduction measures which are intended to protect the public health. Further, such delays in AQMD approval and permit issuance only increase the regulated facility's exposure of receiving Notices of Violation ("NOVs") for failure to implement PAR 1469 measures. 2-1

To address these concerns, the MFA requests that additional language be placed into PAR 1469 which clearly states that the implementation of such BMPs, housekeeping and other control measures would not trigger NSR. And in cases where permit action is necessary, the MFA requests rule language that clarifies and confirms such actions would be exempted from NSR requirements. For example, PAR 1469 may include the following proposed language:

"New Source Review Applicability – The implementation of applicable rule requirements for existing facilities and equipment as of [date of adoption] shall not be deemed a new source, modification nor otherwise trigger permit action or New Source Review. Further, the Executive Officer or his representatives shall not deny any existing New Source Review exemption for permit applications submitted to comply with rule requirements, including but not limited to equipment previously exempted under Rule 219 and modifications with no increase in risk.

(2) Chrome Tank Test Data – As noted previously, the MFA remains concerned that major rulemaking and policy decisions are being based on inconsistent data and little scientific support, especially when it concerns a potential requirement of add-on control devices and other costly measures for currently unregulated tanks. For proposed control requirements under PAR 1469, the cart 2-2

is clearly in front of the horse. If the AQMD wants to effectively control emissions for a technology-based rule, it should start by quantifying emissions from various tank conditions, then and only then, can reasonable determinations be made as to what may pose a "a problem" and how to correct it. For example, it is not clear that an add-on control device would be needed to reduce uncontrolled emissions from a facility. In addition, all of the provisions required in the proposed rule to control additional emissions from other potential sources of hexavalent chromium would be tremendously burdensome for industry, and have essentially no effect on emissions. It is not possible to justify the required rule changes since the AQMD has yet to adequately quantify emissions from applicable tanks. 2-2 (cont'd)

(3) Ambient Air Monitoring – The AQMD has indicated that ambient air monitoring would be considered in separate rulemaking which could impact multiple industries, and therefore, would not be proposing such requirements in the amended Rule 1469. The MFA continues to remain concerned about the use of ambient air monitoring (and fence line limits) for rulemaking and enforcement purposes and have raised legitimate issues of flawed assumptions, unreliable data, contributing sources, prohibitive costs and inconclusive results. Nevertheless, the AQMD continues to selectively utilize such unreliable ambient monitoring data to support its enforcement objectives and unfairly target metal finishers. Moreover, the AQMD continues to rely upon an unsubstantiated 1 ng/m^3 hexavalent chrome standard that is not supported by the current science for enforcement purposes, including orders for facility shut down and business curtailment. Based on testimony of affected small businesses, it is clear the AQMD's continued use of such unreliable air monitoring data is having significant adverse economic impacts, including loss of customers, decreased business volumes and employee layoffs. The MFA will reserve further comment until the AQMD initiates the separate rulemaking regarding ambient air monitoring. 2-3

2.0 FUGITIVES FROM METAL FINISHING OPERATIONS

The MFA does not believe there has been sufficient demonstration that potential fugitive emissions from unregulated chrome tanks are being significantly exhausted from building enclosures, nor that add-on control devices are necessarily required for such tanks. Under existing Rule 1469, the applicable emission limits for existing chromium electroplating and chromic acid anodizing tanks is 1,500 ng/amp-hr, which is typically measured after add-on control devices, such as High Efficiency Particulate Air (HEPA) systems. These add-on control devices are generally mounted on rooftops through a single exhaust stack with forced ventilation. The AQMD continues to be concerned about fugitive emissions from unregulated tanks containing hexavalent chromium, which are being discharged from metal finishing buildings. Rather than relying on assumptions, the AQMD needs to base its regulatory policy and rulemaking on validated scientific data that demonstrates significant fugitive emissions are actually being discharged from buildings through roof vents, doors, windows and other openings. Thus far, any substantial scientific data making such demonstration for fugitive emissions is lacking. Quite the contrary, based on statements from the AQMD source testing staff during the working group meetings, it appears that measured fugitive emissions through rooftop vents from unregulated tanks are far below any measurements at the tank surface by several orders of magnitude, even without any add-on control devices. 2-4

As evidence to support this conclusion, it is our understanding that the highest measurements of fugitive emissions from roof vents at metal finishing operations that has been collected by the AQMD is approximately 30 ng/m^3. In addition, the U.S. Environmental Protection Agency ("EPA") examined the unregulated tanks containing hexavalent chromium as part of both the chromium electroplating NESHAP and the plating and polishing area source NESHAP, and chose not to impose emission limits or controls. Furthermore, the U.S. Occupational Safety and Health Administration ("OSHA") did not recommend engineering controls for these unregulated tanks when setting the federal workplace exposure standard for hexavalent chromium. In short, these regulatory agencies believed that the emissions from these sources did not contribute significantly to air emissions or workplace exposure levels.

As another example of why fugitive emissions from the unregulated tanks are very low, facilities with dichromate seal tanks that have high concentrations of hexavalent chromium are compliant with the OSHA workplace exposure standard for hexavalent chromium with very low workplace exposure levels. If the workplace exposure levels of workers in the breathing zone only a few feet away from tanks are several orders of magnitude lower than the concentrations of hexavalent chromium in the tanks, then it is unlikely that fugitive emissions from these tanks leaving the building would be of much consequence unless, of course, the tank is constantly air sparged and/or running near the boiling point. 2-4 (cont'd)

Based on the data gathered thus far, the fugitive emissions from the unregulated sources exiting the building would be considerably less than the emissions from the permitted sources. Accordingly, the elimination of all fugitive emissions from metal finishing operations would do little, if anything, to reduce ambient air concentrations of hexavalent chromium, particularly considering that metal finishing emissions of hexavalent chromium represent less than one percent of the total hexavalent chromium emissions according to the U.S. EPA National Emissions Inventory.

3.0 PROPOSED RULE AMENDMENTS

At this latest meeting, the AQMD presented proposed rule language which included rule applicability, definitions, general requirements, housekeeping and best management practices (BMPs). While the MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, the following summarizes our primary comments at this time:

(1) Rule Applicability – As explained by AQMD staff, PAR 1469 would apply to chromium electroplating, chromic acid anodizing tanks and associated chrome tanks. Based on our understanding those facilities which do not operate chromium electroplating or chromic acid anodizing tanks would not be subject to PAR 1469, although they may operate tanks with chromium for other purposes. In addition, those tanks which are not associated with chrome plating or chrome anodizing would also not be subject to PAR 1469. If our understanding is correct, this rule applicability for PAR 1469 is consistent with existing Rule 1469 regarding applicable tanks, so the MFA has no further comment. 2-5

(2) Tier I Hexavalent Chromium Tanks – *The MFA would not suggest utilizing a hexavalent chromium concentration for tank classification because not enough data has been provided to support a parts per million number.* Furthermore, it has not yet been proven that hexavalent chromium concentration is a good predictor for high hexavalent chromium emissions. HOWEVER, if concentration levels as measured in parts per million ("ppm") are to be utilized than we offer the following: Tier I tanks should only capture those tanks which exhibit the highest potential for emissions, and therefore exclude tanks which otherwise should remain unregulated. In this regard, the MFA supports the following definition of Tier I tank under PAR 1469 – A Tier I tank means "a tank containing a hexavalent chromium concentration of 50,000 ppm or greater." Based on the AQMD test data provided thus far, the MFA anticipates the following tanks would not qualify as Tier I tanks: 2-6

- Nickel Acetate Seal, Hot Water Seal, Teflon Seal
- Chromate Conversion, Dye Tanks
- Cleaner, De-smut Tanks
- Etch, Neutralization, Passivation
- Rinse Tanks

(3) Tier II Hexavalent Chromium Tanks – *The MFA would not suggest utilizing a hexavalent chromium concentration or a temperature level for tank classification because not enough data has been provided to support a parts per million number or a temperature level cutoff.* Furthermore, it has not yet been proven that hexavalent chromium concentration is a good predictor for high hexavalent chromium emissions. And more data should be sought and provided before setting a square footage level as well. HOWEVER, if the AQMD anticipates add-on control devices for Tier II tanks, then the regulatory definition should be limited to only those tanks which have the following characteristics: (a) a minimum concentration of 75,000 ppm of hexavalent chromium, (b) minimum operating temperature of 190° F, and (c) conducts air sparging. The MFA opposes the generic requirement of "continuous bubbling" observed at the surface of the tank as being a potential qualifier for Tier II tank applicability, as this is vague and subject to wide interpretation by AQMD enforcement officers. 2-7

(4) Freeboard Height – PAR 1469 would require a minimum freeboard height of 8" for applicable Tier I and II tanks, which are newly installed (or modified) after the rule adoption date. The freeboard height requirement would not apply to existing tanks prior to rule adoption. The MFA opposes a freeboard height requirement for existing, new or modified applicable tanks because it has not been demonstrated that a minimum freeboard height results in any meaningful emission reductions. In general, facility operators are already incentivized to maintain a tank freeboard to preserve product quality and minimize chemical losses. To manage a different freeboard height for different tanks would create compliance issues for facility operators while providing minimal environmental benefit. In addition, reconfiguring tanks to provide for additional freeboard may not be feasible for most facilities. At the very least it would be expensive for facilities that could replace or reconfigure tanks to accommodate their parts and the additional freeboard. 2-8

(5) Building Enclosures – Pursuant to PAR 1469 (e), the MFA is concerned about the vagueness in the existing proposed rule language for building enclosures, including cross draft requirements, prohibition of forced air ventilation, sensitive receptor requirements, closure of building openings and others. Based on our interpretation, a building with just a single Tier I tank could not operate with any force air ventilation, must close off any nearby roof vents, and shut all of its doors during operations. If that is not the AQMD intent then the MFA requests clarity in the draft rule, otherwise, there would be wide interpretation by AQMD enforcement officers and potential Notices of Violation. In addition, the MFA does not support monthly inspections of the building enclosures for "breaks, cracks, gaps or deterioration" nor a 72-hour repair requirement, as these requirements are similarly vague and would likely lead to NOVs. 2-9

(6) Permanent Total Enclosures ("PTEs") – PAR 1469 (e)(9) specifies a trigger for PTEs for Tier II tanks based on (a) failure of a source test within 48 months, or (b) more than one incident of failure of smoke and/or slot velocity measurements. If triggered, PAR 1469 requires permit applications for a PTE within 90 to 180 days, and construction of the PTE within 12 months. The MFA does not believe that PTEs are necessary to control potential Tier II tanks, as we anticipate the use of buildings, housekeeping and BMPs would be sufficient control measures. As we have noted before the use of PTEs can also be very costly and difficult to implement, especially for facilities that were not originally designed nor constructed to accommodate PTEs for existing tank operations. 2-10

(7) Source Testing – PAR 1469 (k)(1) will require compliance source testing every 36 months. As we have noted compliance source testing for hexavalent chromium is very costly, especially for facilities with many regulated tanks or permit units. In addition, these source tests generally require several days and disrupt production operations. Given that HEPA control systems for 2-11

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applicable tanks maintain adequate operational efficiency for many years, the MFA questions the need for source testing every 36 months. We are not aware of any other industry with such a rigorous frequency of compliance source testing for add-on control devices. 2-11 (cont'd)

(8) Capture Efficiency Testing – PAR 1469 (k)(6) specifies routine slot velocity and smoke testing for applicable tanks with add-on control devices every month and 6-months, respectively. In particular, PAR 1469 specifies that a facility must "shut down" all chrome electroplating and anodizing lines if such capture tests show a slight deviation of 5% to 10% from the most recently approved AQMD approved source test. The MFA is very concerned with such stringent limitations and the shut down requirement, given the numerous factors that could impact these capture test results, such as equipment sensitivity, testing locations, personnel handling and others. 5% to 10% is a small margin for error which would be difficult to ensure compliance, could result in unnecessary equipment shut downs, and possibly lead to triggering the on-ramp for a PTE pursuant to PAR 1469 (e)(9)(A). 2-12

(9) Notification of Incidents – PAR 1469 (p)(4)(A) requires a regulated facility to notify the AQMD within "one hour" of any failed smoke test, failed source test, exceedance of a permitted ampere-hour limit or malfunction of a non-resettable ampere-hour meter. Further, PAR 1469 (p)(4)(B) requires corrective action and a written report within seven (7) days of notification. The MFA believes these proposed notification requirements are redundant as existing AQMD Rule 430 already covers the reporting of such incidents that result in rule or permit violations. 2-13

(10) Parametric Monitoring – PAR 1469 (m)(1)(D) adds a new requirement that the operator "shall ensure any velocity within 10 feet" of a Tier II tank with an add-on control device is "less than one-tenth of the collection slot velocity as specified in the most recent successful source test." The MFA requests that this proposed requirement be removed as it is unclear what purpose it serves. Moreover, due to its vagueness the requirement would be subject to wide interpretation by AQMD enforcement and likely lead to NOVs. 2-14

(11) Surface Tension Testing – PAR 1469 (o)(4)(D) proposes a "daily" surface tension test for applicable tanks. The MFA opposes such daily testing since the current requirement of weekly surface tension testing is sufficient to ensure compliance. 2-15

(12) Housekeeping – The MFA supports housekeeping measures for applicable tanks under the amended rule with few exceptions. However, the MFA opposes daily cleaning of applicable tanks and operational areas as currently proposed in PAR 1469 (f)(4) and (f)(6). This would place an undue burden on metal finishers. The current cleaning requirement is once per week and we believe this is sufficient housekeeping for applicable operations. As a general note, increasing the administrative burden by requiring tasks or record keeping to be performed more frequently is not conducive to efficient compliance or inspection, and the increased frequency typically has negligible effects on emissions. 2-16

(13) Water Spraying – The MFA supports Best Management Practices for applicable tanks under the amended rule with few exceptions. Regarding the proposed limitations on using water sprays as currently proposed in PAR 1469 (g)(2), the MFA does not believe such limitations are necessary. Given that water spray typically occurs over rinse tanks and that neither the parts nor the rinse tank will have significant amounts of chrome laden liquid. This requirement would impose unnecessary compliance costs with little or no environmental benefit. 2-17

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(14) Compressed Air Cleaning or Drying – Regarding the proposed limitations on using compressed air cleaning or drying as currently proposed in PAR 1469 (g)(7), the MFA does not believe such limitations are necessary. At this point in the process any residual rinse water on finished parts will have negligible amounts of hexavalent chrome, if any. This requirement would impose unnecessary compliance costs with little or no environmental benefit. 2-18

(15) Rinse Tanks – Regarding the proposed limits on rinse tanks as proposed in PAR 1469 (g)(8), the MFA opposes a maximum hex chrome concentration for rinse tanks. Generally speaking, rinse tanks, no matter how concentrated, are not emitters as they are not heated, air sparged or electrified. Rinse tank requirements would not yield any significant environmental benefit as these tanks have negligible amounts of hexavalent chrome content, if any. This will place an undue burden on metal finishers to conduct frequent analytical testing on a daily basis for hex chrome concentrations to ensure compliance. Most metal finishing facilities do not have such analytical equipment or technical capabilities. 2-19

(16) Add-on Control Devices for Tier II Tanks – PAR 1469 (h)(6) specifies add-on control devices for Tier II tanks and proposes a hex chrome emission limit which is to be determined. As noted above, the MFA questions the need for add-on control devices for Tier II tanks based on the limited and inconsistent emission data collected for chrome tanks and rooftop vents. If an emission limit will be adopted, the MFA opposes an emission limit for Tier II tanks which would be lower than the current hex chrome emission limits specified by Table 1, which are currently applicable to existing tanks. The current state of pollution control technology has not significantly changed since the prior amendments to Rule 1469 and, therefore, any lower emission limits would not be justified. 2-20

The MFA and its representatives look forward to continued discussions on the amended rule with the AQMD. Thank you and we look forward to your response.

Sincerely,

Wesley Turnbow

Wesley Turnbow
President

cc: Barry Groveman, Musick Peeler
Ryan Hiete, Musick Peeler
Susan Nakamura, SCAQMD (via email only)
Kurt Wiese, SCAQMD (via email only)

Metal Finishing Association of Southern California Page 7

Responses to Metal Finishing Association of Southern California (MFASC) Comment Letter, submitted 10/12/17

2-1 Response: New Source Review (NSR) and T-BACT requirements are only triggered by an emissions increase. BMPs and housekeeping are generally not activities that require an SCAQMD permit and are not considered a modification and therefore not subject to NSR or requirements to install T-BACT. Many of the activities listed in the comment would be implemented to reduce emissions and would not result in an emissions increase; for example, addition of polyballs or mechanical fume suppressants, installation of pressure gauges, flowmeters and other monitoring equipment, installing a total enclosure around existing tanks, and installing heating, cooling or other rooftop ventilation equipment are all activities that are expected to decrease and not increase emissions. In addition, there is no longer a prohibition on air sparging as was the case when this comment was submitted. Covers for Tier II Tanks are allowed as a method of control, and are allowable for Tier III Tanks in the interim period before air pollution control systems are installed. Please contact SCAQMD Engineering and Permitting staff to determine whether other activities will require a permit application to be submitted and whether an increase in emissions is assumed for these activities.

2-2 Response: Please see Response to Comment 1-1.

2-3 Response: Please see Response to Comment 1-7. Staff has initiated the rule development process for Proposed Rule 1480 – Air Toxic Metals Monitoring, which includes ambient monitoring, background information and proposed provisions such as applicability, timing as to when a facility would be required to conduct ambient air monitoring, thresholds, pollutants monitored, and other actions that would be required based on the results of ambient air monitoring have been or will be discussed. Staff has explained the basis of the 1 ng/m3 hexavalent chromium threshold used in Orders for Abatements for certain facilities in Paramount and Long Beach in multiple PAR 1469 Working Group Meetings. In addition, through ambient monitoring efforts conducted by the SCAQMD there were no orders for facility-wide shutdowns. Provisions in the orders for abatement did require facilities to cease hexavalent chromium emitting operations until the average ambient concentration was below a specified threshold.

SCAQMD has a robust ambient monitoring program that ensures accurate results with established quality assurance and quality control procedures. The ambient monitoring activities in Paramount, Long Beach and Compton were subject to SCAQMD protocols and procedures that are used during sample collection, instrument calibration, chain of sample custody and sample analysis.

2-4 Response: Please see Responses to Comments 1-2 and 1-12.

2-5 Response: PAR 1469 applies to facilities performing chromium electroplating and chromic acid anodizing. PAR 1469 requirements are specific to tanks at these facilities. If facilities that do not perform chromium electroplating or chromic acid anodizing have process tanks that contain chromium, these other facilities are not subject to the requirements of PAR 1469. However, they may be subject to Rule 1426, and under a future rulemaking for PAR 1426 additional requirements may be imposed.

2-6 Response: The Tier I Tank definition, as discussed at Working Group meetings and Public Workshops is contained in paragraph (c)(57). A concentration of 1,000 ppm is appropriate to differentiate Tier I Tanks from those with lower concentrations of hexavalent chromium that have very limited potential for fugitive emissions. The 1,000 ppm threshold for a Tier I Tank was based on the 2012 National Emission Standards for Hazardous Air Pollutants (NESHAP). SCAQMD staff conducted source tests to determine the hexavalent chromium emissions associated with tanks at varying temperatures and concentrations to define Tier I, II, and III tanks. Please also see Response to Comment 14-2.

2-7 Response: Please see Response to Comment 1-1. SCAQMD staff has conducted additional emissions testing and added a new definition for a Tier II and Tier III Hexavalent Chromium Tank. The Tier II Hexavalent Chromium Tank definition is contained in paragraph (c)(58) and the Tier III Tank definition is contained in paragraph (c)(59). Tier III Tanks have the highest potential for emissions and these tanks are the focus of new requirements in PAR 1469. Staff has worked with the stakeholders to refine the concept for these tanks, including the concentration thresholds used in Appendix 10 to define Tier II and Tier III Hexavalent Chromium Tanks.

2-8 Response: The requirements for freeboard height have been removed from PAR 1469.

2-9 Response: Many of the requirements for a building enclosure have been modified since the comment was submitted, including the requirement for Tier I Tanks to be located within a building enclosure that meets the definition of a building enclosure under paragraph (c)(11) and the need for repairs is now clarified to apply to any breach in a building enclosure, however, operation of a Tier I Hexavalent Chromium Tank does not need to be in a building enclosure that meets the requirements of subdivision (e). Tier II and III Hexavalent Chromium Tanks must be within a building enclosure that meets the requirements of subdivision (e).

2-10 Response: Please see Response to Comment 1-11. The triggers for installation of a Permanent Total Enclosure (PTE) have been modified to require a PTE if an owner or operator fails to shut down a Tier II or III Hexavalent

Chromium Tank upon failing a smoke or slot velocity test, instead of requiring a PTE if an owner or operator fails a smoke or slot velocity test.

2-11 Response: Source testing requirements have been modified since this comment was received. PAR 1469 has been changed to require a subsequent source test after the initial source test every 60 months (five years) for facilities with permitted throughput of more than 1,000,000 amp-hrs/yr and every 84 months (seven years) for facilities with permitted throughput of less than 1,000,000 amp-hrs/yr. PAR 1469 requires an emission screening test after an initial sources test within 60 to 84 months if all capture efficiency tests conducted by the owner or operator within 48 months did not require a tank to be shut down and all applicable inspection and maintenance requirements (specified in Appendix 4) were conducted.

2-12 Response: Subdivision (m) provides that after a failing slot velocity measurement the tank must be immediately shut down, rather than the air pollution control (APC) system. Under the current proposal, other tanks served by the same APC system that have acceptable velocity measurements are still allowed to operate. Staff received comments that the deviation of +/-10% from the most recently approved of slot velocity and push manifold pressure was too stringent. A 10% deviation is the long-standing margin of error that SCAQMD's Source Test Engineering division assigns to test evaluations. Staff acknowledges that there are many factors that could alter the capture test results. However, the capture test is required every 180 days. Prior to this test, PAR 1469 requires the owner or operator to maintain control efficiency and monitor operating parameters. Issues can be identified and addressed by the owner or operator prior to necessitating a shutdown of the tank. While PAR 1469 would require a shutdown of the tank that is being controlled by an add-on air pollution control device, it would not require construction of a PTE. Construction of a PTE is based on whether an owner or operator of a facility failed to shut down a tank that had a failing measurement.

2-13 Response: Rule 430 does not apply to any Regulation XIV rules. Therefore, the notification requirements in PAR 1469 are not redundant and subparagraph (p)(4)(A) is necessary. Since the comment was submitted, the 1-hour timing to report a failed smoke test, failed source test, exceedance of a permitted ampere-hour limit, or malfunction of a non-resettable ampere-hour meter, while consistent with the 1-hour requirement to notify SCAQMD of a breakdown under Rule 430, has been extended to four hours.

2-14 Response: The referenced subparagraph has been removed from PAR 1469.

2-15 Response: The requirement under paragraphs (o)(4) and (m)(2) to record the surface tension daily for 20 operating days is an existing requirement. It is not the intent of this provision to restart the 20-day requirement for daily surface tension measurement as a result of the proposed rule amendment. The requirement to measure surface tension every third operating day, increased from weekly measurements, is due to the faster degradation of non-PFOS-containing chemical fume suppressants that can result in hexavalent chromium emissions.

2-16 Response: Please see Response to Comment 1-9.

2-17 Response: Please see Response to Comment 1-10.

2-18 Response: A barrier separating the compressed air cleaning or drying operation within 15 feet of Tier II and Tier III Tanks provides appropriate control to prevent fugitive emissions associated with compressed air cleaning or drying operations from becoming airborne due to drafts within a building enclosure. A tank wall may function as a barrier as long as parts are compressed air cleaned or dried below the lip of the tank. A barrier is not necessary for compressed air cleaning within a PTE.

2-19 Response: Under PAR 1469, only rinse tanks having a hexavalent chromium concentration of 1,000 ppm or greater are considered Tier I Tanks and are subject to housekeeping requirements. Rinse tanks with a hexavalent chromium concentration less than 1,000 ppm do not have any requirements. Please also see Response to Comment 14-2.

2-20 Response: The comment refers to Tier II Tanks. Most of these tanks are now considered Tier III Tanks, with an intermediate designation of Tier II for tanks that meet the definition of paragraph (c)(58). Since receipt of this comment letter, SCAQMD staff has conducted additional samples and testing of hexavalent chromium tanks. Based on test data from a number of Tier I, Tier II and Tier III Hexavalent Chromium Tanks, it is evident that add-on air pollution controls are necessary for control of emissions from Tier III Tanks. The definition of Tier III Tanks, including temperature range and hexavalent chromium concentration, have been discussed at several Working Group meetings.

Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

October 25, 2017

Dear Mr. Nastri,

Our organizations are very concerned about the lack of protections for communities in the proposed chrome plater rule which South Coast is planning on issuing in a few months. The rule has been significantly weakened since it was first proposed, abandoning ambient monitoring provisions, scaling back the use of HEPA filters, and removing the requirements for total enclosure with negative air. To say we are disappointed is an understatement. 3-1

Chrome platers emitting hexavalent chromium into our communities have been very problematic in the South Coast Basin for a long time. Many of our organizations worked on the existing state rule in 2006 and the subsequent local rules in South Coast. We pushed hard for the best protections available then, and to have more stringent requirement for platers located next to schools and sensitive receptors. It is apparent to us now that many facilities just did not comply with the rules and some sources went completely unregulated altogether. From the plater next to Suva School, to Master Plating, to the platers in Paramount and Compton now, the devastating public health effects to communities hosting these plating operations are an endemic part of the terrible history of environmental injustice in the South Coast region. 3-2

Chrome platers are concentrated in the Los Angeles area. No one really knows how many of these facilities exist, not even your own staff, but over 10% of all the chrome platers in the nation call the South Coast air basin their home. New facilities operating without permits are discovered often. These platers, already concentrated in our air basin, are further concentrated in low-income communities of color where enforcement is lax and regulators commonly turn a blind eye to complaints about odors and emissions. The communities of Paramount, Compton, and parts of East Los Angeles all have concentrated pockets of platers. 3-3

This concentration of chrome platers in communities is further exacerbated by other sources of hexavalent chromium emissions such as forgers and metal heat treaters, and potentially other sources not yet identified. Since there are so few air monitors in the basin which detect hexavalent chromium, it would be simply blind luck if a monitor were to be placed in one of these areas of concentration. Ironically, it was the air monitor placed to measure the emissions from Carlton Forge which inadvertently identified the platers in Paramount as an hexavalent chromium air pollution hot spot. 3-4

Each and every source of hexavalent chromium is contributing to the emissions which are endangering our communities. Each and every source needs to take on the responsibility to cease to emit this highly toxic chemical into our homes, schools, play yards, community centers, 3-5 and churches. Our communities should not bear the burden for these emissions with their health and well-being. 3-5 (cont'd)

When the original rule making on chrome platers started earlier this year it envisioned robust monitoring and rigorous air pollution controls for platers. However, pressure from the plating industry has your agency back-tracking on those measures. Without the monitoring, robust pollution controls, and total enclosure of all the industrial processes emitting these dangerous emissions we are no longer confident that this regulatory effort will protect our communities. 3-6

We urge you and your staff to consider the damage to public health which releases of hexavalent chromium are known to cause in the communities hosting these hexavalent chromium sources. We also urge you to think about the environment which the workers at these facilities are laboring in; these hexavalent chromium emissions are dangerous to all who work in this industry. We need the agency to insure that these facilities are made to completely capture these dangerous emissions, and to have the necessary monitoring sufficient to ensure compliance with the rules. 3-7

The European Union has just passed a regulation which will end the use of chromium for decorative purposes; we urge the South Coast AQMD to consider such as action as well. South Coast has taken similar actions before on dry cleaning facilities to ban chemicals which were damaging air quality and we urge you to consider to doing this for chromium as well. 3-8

If our experiences in the communities we represent teach us anything, we have learned that we cannot rely on anything but robust monitoring and a strong enforcement presence to ensure that these facilities are being operated properly and that our communities get the protections they deserve from their government. We urge you to work with us to create a rule which will ensure that families, teachers, workers, parishioners, and community residents are safe from hexavalent chromium in their communities. 3-9

Respectively,
Action Now
Mitzi Shpak
Executive Director
Altadena, CA

American Legion Post 6
Pastor Anthony Quezada
1927 E. Plymouth St.
Long Beach, CA

Apostolic Faith Center
Pastor Alfred Carrillo
1510 E. Rubidoux St.
Wilmington, CA

California Communities Against Toxics
Jane Williams
Executive Director
Rosamond, CA

California Safe Schools
Robina Suwol
Executive Director
Los Angeles, CA

California Kids IAQ
Drew Wood
Executive Director
Wilmington, CA

Coalition for a Safe Environment
Jesse Marquez
Executive Director
Wilmington, CA

Comité Pro Uno
Felipe Aguirre
Coordinator
Maywood, CA

Community Dreams
Ricardo Pulido
Executive Director
Wilmington, CA

Del Amo Action Committee
Cynthia Medina
Assistant Director
Torrance, CA

Earthworks Films, Inc.
Maria Florio
President
Sherman Oaks, CA

East Yard Communities for Environmental Justice
Mark Lopez
Executive Director
Commerce, CA

EMERGE
Magali Sanchez-Hall, MPH
Executive Director
Wilmington, CA

Exide Worker Community Committee
John Sermeno
Executive Director
Maywood, CA

Federación Veracruzana
Angel Morales
President
Huntington Park, CA

Los Angeles Environmental Justice Network
Cynthia Babich
Coordinator
Rosamond, CA
Mary Cordaro Inc.
Mary Cordaro
Environmental and Healthy Building Consultant
Valley Village CA

Maywood Youth Soccer Association
Luis Orizaba
Director
Maywood, CA

Mothers of East Los Angeles
Teresa Marquez
President
Los Angeles, CA

Mujeres Pro Maywood
Elizabeth Matamoros
President
Maywood, CA

NAACP San Pedro-Wilmington Branch # 1069
Joe R. Gatlin
Vice President
San Pedro, CA

Our Right To Know
Rhonda Jessum, Ph.D.
Director
Los Angeles, CA

Padres Unidos de Maywood
Teresa Solorio
President
Maywood, CA

Paramount Community Coalition Against Toxins
Magdalena Guillen
Executive Director
Paramount, CA

Pacoima Beautiful
Yvette Lopez-Ledesma
Deputy Director
Pacoima, CA

Philippine Action Group for the Environment
Fe Koons
President
Carson, CA

Physicians for Social Responsibility – LA
Martha Dina Arguello
Director
Los Angeles, CA

Randall Enterprises, Inc.
David Randall
President
Sherman Oaks, CA

Resurrection Catholic Church
Monsignor John Moretta
Pastor
Los Angeles, CA

San Pedro & Peninsula Homeowners Coalition
Dr. John G. Miller, MD
President
San Pedro, CA

Society for Positive Action
Shabaka Heru
President
Los Angeles, CA

St. Philomena Social Justice Ministry
Modesta Pulido
Chairperson
Carson, CA

Watts Labor Community Action Committee
Timothy Watkins
President/CEO
Los Angeles, CA

Wilmington Improvement Network
Anabell Romero Chavez
Board Member
Wilmington, CA

Responses to Environmental Multi-Agency(34 commenters, Action Now et.al.) Comment Letter, submitted 10/25/17

3-1 Response: PAR 1469 reduces emissions of hexavalent chromium and offers protection to the communities surrounding the affected facilities. PAR 1469 incorporates the requirements of the U.S. EPA chrome NESHAP *(Chromium Electroplating: National Emission Standards for Hazardous Air Pollutants)*, as well as the California Air Resources Board (CARB) Airborne Toxics Control Measure (ATCM) for chrome plating and anodizing *(Airborne Toxic Control Measure for Chromium Plating and Chromic Acid Anodizing Facilities)*. In addition, PAR 1469 requires control of additional process tanks not controlled by the NESHAP or CARB ATCM.

Early discussions regarding ambient monitoring and permanent total enclosures (PTE) under negative pressure vented to HEPA filters were discussed at Working Group Meetings, however, no provisions were included in PAR 1469. PAR 1469 does include a conditional provision for installation of a PTE for facilities that either conduct multiple non-passing source tests or fail to shut down a tank after failing a smoke or slot velocity test. See subdivision (t) of PAR 1469 for more information regarding triggers for installation of a PTE. Please also see Response to Comment 1-11.

PAR 1469 incorporates provisions to reduce migration of fugitive hexavalent chromium emissions outside of a building enclosure, including: closing roof openings within 15 feet of a Tier II or Tier III Tank; closing of enclosure openings located on opposite sides of a building enclosure; and closing of enclosure openings on sides of a building enclosure that directly face the nearest non-school sensitive receptor within 1,000 feet and directly face the nearest school within 1,000 feet. Please also see Response to Comment 9-1.

Although ambient monitoring provisions are not included in PAR 1469, a separate rule for ambient monitoring is planned. Please also see Response to Comment 1-7.

3-2 Response: The U.S. EPA NESHAP, CARB ATCM, and Rule 1469 only addresses chromium emissions from plating and anodizing tanks. Ambient monitoring and emissions testing conducted by SCAQMD staff revealed significant sources of hexavalent chromium emissions from certain non-plating tanks that were sparged (air-agitated), electrolytic, or operated at elevated temperatures. Control of these tanks, considered Tier II and Tier III Tanks is required under PAR 1469. Staff inspects chrome plating and chromic acid anodizing facilities and enforces air quality rules. Please also see Response to Comment 3-3.

In addition to addressing emissions from individual tanks at plating and anodizing facilities, PAR 1469 will reduce fugitive emissions of hexavalent chromium through best management practices, requiring a building enclosure for operations, limiting enclosure openings and specifying operational factors to limit cross drafts through a building enclosure. A PTE that is vented to air pollution control equipment meeting a high level of control, is required in certain situations.

3-3 Response: Staff has an accurate count of all plating and anodizing facilities that have permits with the SCAQMD and are subject to Rule 1469. As discussed in Chapter 1, staff conducted numerous searches to identify facilities that would be subject to PAR 1469. Staff conducted internet searches, verified lists of companies provided by stakeholders, and reviewed the SCAQMD's permit database for any potential PAR 1469 facilities.

SCAQMD regulates all facilities within its jurisdiction consistently across communities and SCAMD staff conducts inspections at all facilities with SCAQMD permits. Facilities regulated under Rule 1469 are subject to quarterly inspections, where inspections are conducted consistently facility to facility regardless of their location. SCAQMD staff routinely respond to complaints about odors and emissions received from the public.

3-4 Response: SCAQMD has existing rules that currently address many source categories of hexavalent chromium emissions, including from chrome plating and anodizing operations (Rule 1469 - *Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations*); from grinding operations at metal forging facilities, (Rule 1430 - *Control of Emissions from Metal Grinding Operations at Metal Forging Facilities*); from cooling towers (Rule 1404 - *Hexavalent Chromium Emissions from Cooling Towers*); from spraying of coatings containing chromium (Rule 1469.1 - *Spraying Operations Using Coatings Containing Chromium)* and from metal finishing operations (Rule 1426 - *Emissions from Metal Finishing Operations*). In addition to existing rules for the source categories described above, SCAQMD has also proposed rules to address hexavalent chromium emissions from metal melting operations (PR 1407 - *Control of Emissions of Arsenic, Cadmium and Nickel from Non-Ferrous Metal Melting Operations*); from heat treating (PR 1435 - *Control of Emissions from Metal Heat Treating Processes*) and from laser cutting of metals (PR 1445 - *Control of Toxic Emissions from Laser Arc Cutting*). PAR 1469 will reduce emissions of hexavalent chromium from fugitive sources, through housekeeping practices and by requiring building enclosures, as well as from point sources. Other SCAQMD rules described above also include requirements to reduce metal air toxic emissions.

Under the SCAQMD Community Air Toxics Initiative, SCAQMD will systematically identify and prioritize high-risk facilities, then use the latest air monitoring technology to confirm specific sources causing high emissions. If necessary, SCAQMD will seek Orders for Abatement from the independent SCAQMD Hearing Board to require these facilities to reduce their emissions to a level that does not pose an immediate threat to public health.

Air monitoring in the Compton area has begun to launch this initiative. Efforts there will initially focus on chromium plating and anodizing plants. In addition, the SCAQMD has received a series of metallic odor complaints from community members in Paramount. In response, staff began conducting investigations into local sources of emissions.

3-5 Response: Please see Response to Comment 3-4.

3-6 Response: Please see Response to Comment 3-1

3-7 Response: Please see Response to Comment 3-1. Regarding your comments on the environment in which the workers at these facilities labor, and that hexavalent chromium emissions are dangerous to all who work in this industry; after consultation with CAL-OSHA, SCAMQD staff verified that there is no conflict between the requirements of PAR 1469 and the requirements of CAL-OSHA, the agency responsible for indoor air quality at industrial facilities. Implementation of PAR 1469 to install air pollution controls for Tier III Hexavalent Chromium Tanks is expected to also improve the work environment as these thanks will be ventilated to pollution controls rather than emitting within the building exposing workers to high levels of hexavalent chromium emissions.

3-8 Response: The European Union (EU) REACH program allows Authorisations (i.e. exemptions) for up to 12 year review periods to identify alternatives. In addition, the EU may allow additional time to identify and implement alternatives after the initial review period, depending on the outcome of the initial review period. Authorisations have been granted for chromic acid anodizing and hard and decorative plating operations. Authorisations have been granted for the appearance and color of plated products. It should be noted that EU Authorisations are very broad, and can include both upstream and downstream users within a single Authorisation. The EU defines "functional decorative plating", which is very broad and includes architectural, automotive, and metal manufacturing, a definition which includes decorative plating as commonly recognized in the United States.

Please also see Response to Comment 9-2.

3-9 Response: Please see Responses to Comments 3-1 and 3-3.

PROMOTING EH&S COMPLIANCE BY ACHIEVING IMPROVED COMMUNICATION BETWEEN INDUSTRY AND GOVERNMENT

November 8, 2017

Mr. Eugene Kang
Program Supervisor
Planning, Rule Development and Area Sources
South Coast Air Quality Management District
21865 Copley Drive Diamond Bar, CA 91765
Phone: (909) 396-3524

Subject: Proposed Amended Rule 1469 Comments

Dear Mr. Kang,

The Industrial Environmental Coalition of Orange County (IEC/OC) appreciates the opportunity to provide comments to the South Coast Air Quality Management District (SCAQMD) on Proposed Amended Rule (PAR) 1469, Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations. The IEC/OC represents diverse industrial businesses in Orange County, including aerospace companies, metal processing facilities, pharmaceutical companies, general manufacturing, and public utilities. Our mission is to facilitate communication between industry and government agencies on environmental issues impacting our member's business operations.

In pursuing rule developments and other actions, the IEC/OC requests that SCAQMD consider reasonable, fair, and cost-effective emission control requirements that will properly achieve the health protection goals of the SCAQMD's Air Toxic Initiative.

In general, IEC/OC's finding on PAR 1469 is that certain conditions and requirements included in the draft rule language may not be feasible considering current operating parameters of existing tanks and tank lines. Implementation of PAR 1469 in its current form would render certain tank lines at existing facilities inoperable, and could force businesses out of the district. The requirements of PAR 1469 should be revised to account for difficulties associated with modifying existing operations. 4-1

IEC/OC has the following specific comments on PAR 1469:

1. **Comment 1 – The Requirements for freeboard height contained in Section (d)(4) of the draft rule language are not feasible at existing facilities.** The current industry standard is a freeboard height of four inches for electroplating, and many existing facilities have automated tank lines that have a uniform freeboard height of four inches. Changing the freeboard height of one tank in an existing line to eight inches would render these automated lines inoperable. Automated lines are difficult to physically modify for reasons including, over-head clearance limitations, existing rack size and configuration, and strict process specifications that are set and audited by defense and commercial aircraft customers. In addition, parts loaded into the rack of an automated line will not be fully submerged if the liquid level of one tank were to be lowered. This would result in failure to meet established performance standards. IEC/OC suggests that the eight-inch freeboard height requirement be changed from modified and new Tier II tanks to new standalone tanks or new tank lines, only. The requirement for freeboard height of eight inches should not apply to existing process lines. 4-2

IEC/OC PO BOX 2211, COSTA MESA, CA 92628 PH: 657.210.2432
EMAIL: INFO.IECOC@GMAIL.COM WWW.IECOC.NET

Mr. Eugene Kang
SCAMQD
November 8, 2017
Page 2

2. **Comment 2 – The compliance dates for permit application submittal do not allow enough time to adequately assess options and prepare an application for successful modifications.** The draft rule language establishes compliance time limits for permit application submittal of 180 to 365 days. Additional time is needed to properly plan, design, and apply for significant process changes, such as add-on control devices. Six months is inadequate to develop a strategy, confirm that control device operating parameters, such as capture air velocity and pressure drop across various control processes, will meet the requirements of the new rule, and confirm the newly designed process will continue to meet customer specifications. To ensure process modifications and/or add-on control technologies achieve long-term success, adequate time should be allowed for research, planning, design, and application preparation. IEC/OC suggests a compliance date of two years after the date of adoption for permit application submittal. 4-3

3. **Comment 3 – The definition of a Tier II Tank was established using insufficient data.** Page 1-22 of the Preliminary Draft Staff Report states, "Further testing will be conducted to determine whether there are significant increases in emissions in the range of temperatures between 140 and 170 degrees Fahrenheit." Despite this statement and the lack of supporting evidence, the current definition of a Tier II tank includes 140 degrees as the temperature threshold, and a Public Workshop was held for the PAR. Further progress on PAR 1469 should be delayed until adequate data regarding key quantitative definitions are obtained. 4-4

The IEC/OC supports an open dialogue on SCAQMD's Air Toxics Initiative, PAR 1420, and other actions, to effect beneficial rule developments. If you have any questions, please do not hesitate to contact me at (562) 495-5777.

Sincerely,

Chris Waller

IEC/OC Air Regulations Sub-Committee Chair

Mission Statement: Our goal is to provide a forum for Orange County businesses to remain current on emerging issues and to exchange views with environmental and safety agencies in an open and informal setting.

IEC/OC PO BOX 2211, COSTA MESA, CA 92628 PH: 657 210 2432
EMAIL: INFO.IECOC@GMAIL.COM WWW.IECOC.NET

Responses to Industrial Environmental Coalition Orange County Comment Letter, submitted 11/8/17

4-1 Response: The economic impacts resulting from compliance with PAR 1469 are analyzed in the Socioeconomic Impact Assessment.

4-2 Response: The requirements for freeboard height have been removed from PAR 1469. Continuing with SCAQMD's current permitting practice, the freeboard heights of individual tanks will be determined during the permit evaluation process.

4-3 Response: The proposed requirements for permit application submittals relating to controls on Tier III Tanks are 180 days, 365 days, and 545 days after rule adoption for chromic acid anodizing, hard chrome plating, and decorative chrome plating facilities, respectively. PAR 1469 allows sufficient time for preparation of a permit application that considers the required research, plan, and design for the air pollution control system. Once a complete permit application is received, the facility and SCAQMD permit engineering staff typically continue discussions to work out issues or design changes prior to issuance of a SCAQMD Permit to Construct.

4-4 Response: Please see Response to Comment 1-1.

From: Jim Meyer [mailto:jmeyer@aviation-repair.com]
Sent: Friday, November 10, 2017 11:43 AM
To: Eugene Kang <EKang@aqmd.gov>; Neil Fujiwara <nfujiwara@aqmd.gov>; Susan Nakamura <SNakamura@aqmd.gov>
Subject: PAR 1469 Comments

Please consider the following comments regarding the proposed rule 1469.

Please consider a modification to the rule requiring two doors at a facility not be open simultaneously. We think the rule could be reasonably modified (improved) by:

1. Allowing facilities which are not near sensitive receptors to have doors open. This provides a further incentive to locate facilities away from sensitive receptors. It should be a policy goal to create positive incentives for locating plating businesses away from sensitive receptors. By creating positive incentives, you can influence plating businesses to move away from schools.
2. Allowing the doors to be opened at facilities where plating tanks are more than 30 feet from a door.
3. Allowing facilities which generate less than 20 million amp hours annually to open the doors.
4. Allowing facilities to open doors when they are not actively plating.
5. Allow the doors to be opened if the facility has constructed baffles to block a cross-draft.

Our reasoning is as follows: 5-1

1. If and when it is windy, operators will voluntarily choose to close the doors because they do not want dust to contaminate their tanks.
2. If a business is not near a sensitive receptor, there is no bad consequence of opening the doors.
3. If plating tanks are not near doors, there is much less likelihood that opening doors would enable fugitive emissions. 30 feet is a reasonable distance.
4. Tanks vented to HEPA's which are able to pass smoke tests are not generating fugitive emissions.
5. Employee health should be considered in the rule making. Temperature and humidity can rise dramatically inside a plating facility on warm days. Heat is a health issue. It is inefficient to air condition the buildings because of the HEPA's. Opening doors is a reasonable method to assure employee safety.

The point is that the "doors" rule accomplishes very little at some facilities at a cost that is high in terms of employee health and safety.

We are also concerned that the section of the rule that "prohibits operations of any devices in any roof opening which pull air from the building enclosure to the outdoor air" is going to cause problems with previously permitted operations. We have a set of AQMD permitted tanks containing various stripping, etching, pre-treatment, and cleaning solutions (no chrome) which are vented through hoods to a blower and stack on our roof. These hooded tanks are near chrome plating tanks but the chrome tanks have pollution controls so there should not be a concern about fugitive emissions. We have been operating safely with the current setup for decades, without complaint, not near sensitive receptors. We cannot operate without the permitted tanks that vent to the roof. We do not know what you would require to solve the issue but it seems expensive. At a minimum, our line should be grandfathered and be allowed to change if necessary for work needs. 5-2

We use air sparging while plating and have always used air sparging. Sparging is essential to successfully plate the inner diameters of cylinders associated with landing gear systems, flight controls, and thrust reversers. These are flight critical aircraft components and the quality of the plating should not be sacrificed when the sparging mist is being captured by the HEPA system in any case. We plate at night with the doors closed and no one in the building, the HEPA system with push pull headers captures the sparging mist. Regarding the need to prove the need to sparge with a Mil-Spec, we would hope that SAE specs, or Specs from major OEMs would suffice for proof as we serve predominately the commercial aircraft industry. We do not know why suppliers that support the military would get advantaged in an area that has to do with flight safety. 5-3

It is un-necessary to increase the frequency of source tests. Our HEPA system has proved efficient for two decades with wide gaps between source tests. We actively maintain the system. Requiring additional frequent scrutiny of source controls that have already worked to cut emissions by 99% (per AQMD data) is un-necessary and massively expensive. It is hard to understand what the motivation is to change the frequency of source testing when the impetus for the rule change was generated at facilities without adequate source controls. Imposing this requirement will force industry consolidation resulting in fewer small businesses (with low amp hours) and more of the types of facilities where you are observing the issues. This additional testing seems counterproductive. We suggest this is an area you should consider source test frequency requirements as a function of proximity to sensitive receptors. Facilities which are not near sensitive receptors should need fewer source tests than facilities near sensitive receptors. This is another area of the rule where you can create a positive incentive to locate away from sensitive receptors. 5-4

The attempt to regulate grinding in the rule is inconsistent because it applies only to rule 1469 facilities. Most grinding is not conducted in rule 1469 facilities. Is it intended to apply to both "wet" grinding and "dry" grinding? Would the rule apply to grinding conducted in a separate building on the same property? 5-5

The AQMD has explained in each meeting that the reason for updating the rule is due to conditions observed at ANODIZING facilities and HEAT TREATING facilities. We do not perform anodizing nor do we perform heat treating and yet we find that nearly every proposed rule change will increase our regulatory burden and expense.

We have operated within the regulations and without public complaints for over a decade in this location. AQMD rule making should take into account that small facilities which are located in heavy industrial zones that are not near sensitive receptors and that do have state of the art pollution control systems (HEPA) should not be excessively burdened by a rule change like this. The need for rule change was driven by different types of businesses in a different type of location and the rule changes should have been focused on the differences which caused the problems in those locations. There is nothing wrong with the existing frequency of source tests. There is nothing wrong with air sparging in HEPA controlled tanks. Opening doors for employee comfort in a heavy industrial zone is reasonable considering the major cancer risks in those zones are not Hex Chrome. The pollution controls we have invested in have proven valuable to society in the LA Basin. Threatening the health of employees (door rule), decreasing plating quality (sparging), and adding burden (source test frequency) to compliant small businesses will only result in negative impacts on Southern California. 5-6

We would appreciate your acknowledgement of receiving these comments and your consideration of implementing these thoughts in the final rule.

Jim Meyer
Aviation Repair Solutions, Inc.
1480 Canal Ave
Long Beach, Ca. 90813
562-437-2825

Responses to Aviation Repair Comment Letter submitted 11/10/17

5-1 Response: Allowing facilities that are not near sensitive receptors to have doors open does not address concerns for fugitive dust potentially containing hexavalent chromium settling outside the buildings on other land uses accessible to the public that are not defined as a sensitive receptor, such worker receptors in industrial zones. Ambient monitors have shown that closing a door to eliminate cross-draft can reduce the ambient concentration of hexavalent chromium by more than 75 percent. The commenter also states that some facilities may voluntarily choose to close doors if it is windy in order to avoid dust contaminating tanks, however, other facilities may choose to keep them open, absent a requirement to close them. In place of a closed door, PAR 1469 allows for other methods for minimizing cross-drafts, including the use of overlapping plastic strip curtains, vestibules, airlock systems, and other methods that an owner or operator can demonstrate is an equivalent or more effective method to minimize movement of air within a building enclosure. Tanks vented to HEPA filters which are able to pass smoke tests are allowed to demonstrate that point source emissions are being captured from a tank at the time of the test, but this test is only required once every 180 days and the system can become fouled before the next test is conducted. Requirements for closing doors will provide additional assurance that potential process fugitives from these situations are not escaping the building enclosure between smoke tests. Since facilities with over 500,000 amp-hours annually are already recognized by Rule 1469 and the CARB ATCM for chrome plating as a high throughput facility, it is not reasonable to exempt facilities that generate less than 20 million amp-hours annually.

Regarding considerations for employee health, PAR 1469 includes a provision that allows facilities to implement alternative requirements to closing doors and other building enclosure provisions if PAR 1469 conflicts with OSHA, CAL-OSHA or local municipal code requirements for worker safety.

5-2 Response: PAR 1469 requires closure of all enclosure openings in the roof that are located within 15 feet from the edge of any Tier II or Tier III Tank, except enclosure openings in the roof that are used to allow access for equipment or parts, or provide intake air or circulation air for a building enclosure that does not create air velocities that impact the collection efficiency of a ventilation system for an add-on air pollution control device. Powered devices in the roof opening that are located within this distance can continue to operate if the air is vented to HEPA filters. Provisions for openings in a roof have been modified throughout the rulemaking process. Please refer to paragraph (e)(3) for more information.

5-3 Response: The prohibition on air sparging that was a part of the first proposal for PAR 1469 has been removed.

5-4 Response: Rule 1469 currently requires a one-time source test for the life of the air pollution control device. Periodic source testing is necessary to quantitatively confirm that hexavalent chromium emissions measured at the stack of the control device are in compliance with emission rate limits of the rule. Consequently, PAR 1469 includes a periodic source testing requirement. Staff acknowledges the cost of these source tests so PAR 1469 allows existing controlled tanks to use a source test that meets specific criteria and conducted after January 1, 2009 to comply with the initial source test requirement of PAR 1469. Other reductions to source testing costs include allowing emissions screening tests (source test consisting of one run) versus triplicate tests for source tests conducted after the initial source test. Facilities that operate in full compliance with specific requirements for qualitative and quantitative assessments of control equipment will also have a once every five years testing schedule for facilities with permitted throughput of more than 1,000,000 amp-hrs/yr and once every seven years for facilities with permitted throughput of less than 1,000,000 amp-hrs/yr, so long as they remain compliant with said requirements. By only requiring periodic source testing for facilities that are located near sensitive receptors, stack emissions can settle on other land uses accessible to the public that are not defined as a sensitive receptor, in addition to worker receptors in industrial zones.

5-5 Response: Both Rule 1469 and the CARB ATCM for chrome plating currently include requirements for grinding operations conducted at chrome plating and anodizing facilities. Regarding grinding operations, existing provisions require that a physical barrier separates grinding areas within a facility from the hexavalent chromium electroplating or anodizing operation. Grinding conducted in a separate building on the same property of a Rule 1469 facility would still be subject to grinding requirements of the rule, however, having this grinding area located in a separate building would comply with the existing requirement for installation of a physical barrier. PAR 1469 adds an exemption to grinding requirements of the rule if the grinding is conducted under a continuous flood of metal removal fluid.

5-6 Response: Please see Responses to Comments 5-1 through 5-5. The impetus for development of PAR 1469 includes the discovery of tanks that were previously unknown to be a source of hexavalent chromium emissions and cross-drafts in buildings that house both chrome plating and chromic acid anodizing operations. Observations made during site visits conducted by staff include building conditions that resulted in the escape of fugitive dust at all types of chrome plating facilities and not just chromic acid anodizing facilities.

MFASC
METAL FINISHING ASSOCIATION OF SOUTHERN CALIFORNIA, INC.

November XX, 2017 **DRAFT**

Mr. Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91765

Re: Comments from Metal Finishers Association - Proposed Amended Rule 1469 and Preliminary Draft Staff Report, Working Group Meeting #7

Dear Mr. Nastri:

The Metal Finishers Association ("MFA") represents over 130 companies throughout Northern and Southern California, which comprise a diverse industrial base of metal finishing and related businesses that employ thousands of workers. Its members provide necessary products and services to manufacturers in various other industries, including, automotive, consumer products, industrial, energy, aerospace and numerous others. In particular, a large segment of our membership provide mission critical parts and components for military aircraft, satellites, telecommunications, defense and the like. In addition, well over 90% of the MFA membership meet the federal definition of Small Business with fewer than 150 employees, and are typically private family businesses or otherwise small closely held companies.

Representatives of the MFA, including legal counsel and technical experts, have been actively engaged with AQMD staff since the beginning of the recent rulemaking process earlier this year. MFA members and its representatives have also attended all seven (7) public working group meetings, including, the most recent meeting held on October 26, 2017 (referred to as "Working Group Meeting #7"), plus participated in numerous other meetings with the AQMD's legal counsel, economic experts and rule development staff. In addition, the MFA and its representatives attended and testified at the Public Hearing on this rule development which was held on November 1, 2017. This comment letter addresses the issues raised at the Working Group Meeting #7, recent public hearing, PAR 1469 rule language and Preliminary Draft Staff Report.

1.0 PRELIMINARY DRAFT STAFF REPORT

While the MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, at this time, the following summarizes our primary concerns and comments for the Preliminary Draft Staff Report dated October 2017 (Staff Report):

(1) <u>Chrome Tank Test Data – The</u> Staff Report presents the collected emission test data from the various metal finishing facilities as being supportive of the rule amendments (Page 1-14 to 1-17). As we have noted on numerous occasions, the MFA remains concerned that major rulemaking and policy decisions are being based on inconsistent data and little scientific support, especially when it concerns a potential requirement of add-on control devices and other costly measures for currently unregulated tanks. 6-1

P.O. Box 6547, Burbank, CA 91510-6547 (818) 238-9590 www.mfaca.org

As a general matter, the Staff Report fails to qualify these field test data as being extremely limited for purposes of this rule development, but instead, presents the data as complete and scientifically supported which is misleading. For example, PAR 1469 defines a Tier I tank with hexavalent chrome content of 1,000 ppm, however there is insufficient field data indicating there are any significant emissions at such a low threshold. Quite the contrary, there were only 2 or 3 emissions data points collected for unregulated tanks between 32,000 and 60,000 ppm hexavalent chromium, and yet a far lower limit of 1,000 ppm is being proposed as the Tier I applicability threshold. As another example, PAR 1469 defines a Tier II tank as a Tier I tank with an operating temperature exceeding 140° F; however, there is virtually no tank temperature data collected for tanks operating below 190° F with the exception of one tank at 170° F which was not a chrome tank, but rather a nickel acetate seal tank. As a consequence, there is no data whatsoever that supports an operating temperature of 140° F as being significant factor of fugitive hexavalent chrome emissions from applicable tanks, and yet, this temperature level was established as the Tier II applicability threshold. These are only a couple examples of the "cart being in front of the horse" when it comes to this particular rule development. From the beginning, the MFA has been concerned that this rule development (and associated enforcement activities) have largely been an exercise to selectively find evidence that supports a certain theory rather than objectively gathering data in a scientific manner and drawing appropriate conclusions. Due to these concerns and others, the proposed rule has the potential to be tremendously burdensome for industry while having little to no significant effect on emissions. 6-1 (cont'd)

(2) Fugitive Emissions – While the emissions test data from unregulated tanks has been very limited, there has also been insufficient demonstration that fugitives from such tanks are being significantly exhausted from buildings, nor that add-on control devices are necessarily required for such tanks. Under existing Rule 1469, the applicable emission limits for existing chromium electroplating and chromic acid anodizing tanks is 1,500 ng/amp-hr, which is typically measured after add-on control devices such as High Efficiency Particulate Air (HEPA) systems. These add-on control devices are generally mounted on rooftops through a single exhaust stack with forced ventilation. Rather than relying on assumptions, AQMD needs to base its regulatory policy and rulemaking on validated scientific data that demonstrates significant fugitive emissions are actually being discharged from buildings through roof vents, doors, windows and other openings. Thus far, any substantial scientific data making such demonstration for fugitive emissions is lacking. Quite the contrary, based on statements from the AQMD source testing staff during the working group meetings, it appears that measured fugitive emissions through rooftop vents from unregulated tanks are far below any measurements at the tank surface by several orders of magnitude, even without any add-on control devices. Based on the data gathered thus far, the fugitive emissions from the unregulated sources exiting the building would be considerably less than the emissions from the existing permitted sources. Accordingly, the elimination of all fugitive emissions from metal finishing operations would do little, if anything, to reduce ambient air concentrations of hexavalent chromium, particularly considering that metal finishing emissions of hexavalent chromium represent less than one percent of the total hexavalent chromium emissions according to the U.S. EPA National Emissions Inventory. 6-2

(3) Ambient Monitoring Near Metal Finishers – The Staff Report presents the ambient monitoring data of hexavalent chromium around five (5) metal finishers in the cities of Newport Beach, Paramount, Long Beach and Compton (Page 1-8 to 1-10). Air toxics enforcement actions against these facilities have referenced a hexavalent chromium concentration of 1 ng/m^3 as a fence line (or near fence line) threshold for enforcement purposes. For the facilities in Newport Beach and Paramount, the Staff Report indicates average high ambient readings for hexavalent chromium of 3.5 to 11.0 ng/m^3, which were subsequently reduced to 0.25 to 0.40 ng/m^3. The Staff Report indicates the Long Beach facility had average hexavalent chrome readings from 0.4 to 0.9 ng/m^3, which are below the enforcement threshold of 1 ng/m^3. As we have noted on numerous occasions, the MFA continues to remain concerned about the use 6-3

of ambient air monitoring (and fence line limits) for rulemaking and enforcement purposes, and have raised legitimate issues of flawed assumptions, unreliable data, contributing sources, prohibitive costs and inconclusive results. Nevertheless, the AQMD continues to selectively utilize such unreliable ambient monitoring data to unfairly target metal finishers, and support its enforcement and rulemaking efforts. Moreover, the AQMD continues to rely upon an unsubstantiated 1 ng/m^3 hex chrome standard that is not supported by the current science for enforcement purposes, including, orders for facility shut down and business curtailment. Based on testimony of affected small businesses, it is clear the AQMD's continued use of such unreliable air monitoring data is having significant adverse economic impacts, including, loss of customers, decreased business volumes and employee layoffs. 6-3 (cont'd)

2.0 PROPOSED RULE AMENDMENTS

The AQMD presented proposed rule language dated October 20, 2017, which included rule applicability, definitions, general requirements, housekeeping and best management practices (BMPs). While the MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, the following summarizes our primary comments at this time:

(1) Rule Applicability - As explained by AQMD staff, PAR 1469 would apply to chromium electroplating, chromic acid anodizing tanks and associated chrome tanks. Based on our understanding, those facilities which do not operate chromium electroplating or chromic acid anodizing tanks would not be subject to PAR 1469, although they may operate tanks with chromium for other purposes. In addition, those tanks which are not associated with chrome plating or chrome anodizing would also not be subject to PAR 1469. If our understanding is correct, this rule applicability for PAR 1469 is consistent with existing Rule 1469 regarding applicable tanks, so the MFA has no further comment. 6-4

(2) Definition of "Building Enclosure"- The MFA requests that PAR 1469 (c)(11) is changed as follows, which removes rule ambiguity and minimizes wide interpretation by AQMD enforcement officers for possible issuance NOVs: "BUILDING ENCLOSURE means a permanent building, enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with limited openings to allow access for people, vehicles, equipment, or parts. ~~that is free of breaks, cracks, or gaps, or deterioration that could cause or result in fugitive emissions.~~" 6-5

(3) Definition of "Modification" - As previously noted, the MFA is concerned that efforts by regulated facilities to comply with rule requirements may be construed as a "modification" or otherwise trigger permit actions and New Source Review (NSR). A few examples of BMPs, housekeeping and other control measures under PAR 1469 which may trigger NSR are (a) relocating tanks farther away from roof vents, (b) installing covers to existing tanks, (c) adding polyballs or other mechanical fume suppression, (d) replacing air sparging with mechanical agitation; (e) installing or upgrading pressure gauges, flowmeters or other required monitoring devices; or (f) installing a total enclosure around existing tanks. Consequently, the MFA requests PAR 1469 (c)(40) is changed to include the following additional exclusions from the definition of "Modification": 6-6

> ". . . *Routine maintenance and/or repair shall not be considered a physical change. A change in the method of operation of equipment, unless previously limited by an enforceable permit condition, shall not include:*
>
> *iv. The removal of air sparging as a method of agitation;*
> *v. The addition of mechanical agitation as a method of agitation;*
> *vi. The addition of polyballs or other mechanical fume suppression;*
> *vii. Installation of covers for applicable tanks;*

viii. *The relocation of applicable tanks within a facility,*
ix. *Installing or upgrading pressure gauges, flowmeters or other required monitoring devices;* 6-6 (cont'd)
x. *Installing a total enclosure around existing tanks;*
xi. *Installing heating, cooling or other rooftop ventilation equipment.*

(4) Tier I Hexavalent Chromium Tanks – PAR 1469 (c)(58) proposes a threshold of 1,000 ppm of hexavalent chromium content to qualify Tier I tanks. As we have noted, there is insufficient scientific support and test data that justifies such an extremely low concentration threshold for Tier I tanks. Tier I should only apply to those tanks which exhibit the highest potential for hexavalent chrome emissions, and therefore exclude all other tanks from regulatory applicability, such as, chromate conversion tanks, dye tanks, cleaner and de-smut tanks, etch, neutralization, passivation, dilute chromate seal and rinse tanks. Based on the limited test data presented by the AQMD, and since there is no minimum chrome concentration to qualify a Tier II tank, there needs to be a much higher hex chrome threshold for Tier I tanks. In this regard, the MFA proposes the following definition for Tier I tank: 6-7

PAR 1469 (c)(58) - TIER I HEXAVALENT CHROMIUM-CONTAINING TANK means a tank permitted as containing a hexavalent chromium concentration of 5,000 parts per million (ppm) or greater.

(5) Tier II Hexavalent Chromium Tanks – PAR 1469 (c)(59) proposes a Tier II tank applicability for a Tier I tank with: (a) minimum operating temperature of 140° F; (b) conducts air sparging; or (c) is electrolytic. The MFA is concerned that there is no minimum hex chrome concentration to qualify a Tier II tank. In addition, there is no scientific support nor test data that justifies 140° F temperature threshold for Tier II applicability, which is extremely low. Based on the Staff Report, the minimum temperature threshold for Tier II tank applicability should be **190° F,** which captures tanks operating near the boiling point of water. The temperature threshold of 140° F is not supported technically, scientifically or otherwise. Lastly, the MFA remains concerned about air sparging restrictions as well, which are discussed further below. In this regard, the MFA proposes the following definition for Tier II tank: 6-8

PAR 1469 (c)(59) - TIER II HEXAVALENT CHROMIUM-CONTAINING TANK means a TIER I HEXAVALENT CHROMIUM-CONTAINING TANK that meets the following criteria:

(A) Has an operating temperature above 190 degrees Fahrenheit; or
(B) Uses air sparging as an agitation method; or
(C) Is electrolytic.

(6) Prohibition of Air Sparging – PAR 1469 (d)(3) prohibits any a Tier II tank from air sparging as a method of agitation after 180 days of rule adoption, unless proof of a military specification is submitted within 30 days, and there is written approval from the Executive Officer. Since Tier II tanks are already subject to air pollution controls, source testing and emission limits, there is no justification to prohibit air sparging in such tanks. Further, metal finishers require the flexibility to meet changing market demands, prime contractor specifications and customer requirements at all times, whether military or other markets. The requirement of a military specification and written prior approval from the AQMD will handcuff many metal finishers from chasing new business, quoting potential jobs, satisfying existing customers and running their businesses. Moreover, seeking prior AQMD approval will certainly be a speculative and likely time consuming process. As a consequence, this prohibition creates substantial business risk with little environmental benefit, which should be removed from PAR 1469. 6-9

(7) Freeboard Height – PAR 1469 (d)(4) would require a minimum freeboard height of 8" for applicable Tier I and II tanks, which are newly installed (or modified) after the rule adoption date. The freeboard height requirement would not apply to existing tanks prior to rule adoption. As noted previously, the MFA opposes a freeboard height requirement for existing, new or modified applicable tanks, as it has not been demonstrated that a minimum freeboard height results in any meaningful emission reductions. In general, facility operators are already incentivized to maintain a tank freeboard to preserve product quality and minimize chemical losses. To manage a different freeboard height for different tanks would create significant compliance issues for facility operators while providing minimal environmental benefit. 6-10

(8) Building Enclosures – PAR 1469 (e)(1) through (e)(9) specifies numerous building enclosure requirements for both Tier I and Tier II tanks, which the MFA offers the following comments:

a) *Limitation on Building "Openings"* – As per PAR 1469(e)(1), the MFA opposes the 3% surface area limitation on the number of openings in building enclosures, such as doors, windows, roll up doors and others. Over the course of the prior 6 months of rule development and workshops, a specific surface area or other limitation on building openings has never been presented nor studied by the AQMD staff, and is not supported by any scientific or other evidence in the record. 6-11

b) *Closure of Openings within 100 feet of Sensitive Receptor* – As per PAR 1469(e)(2), the MFA requires additional flexibility in the requirement to close all building openings within 100 feet of a sensitive receptor, school or early education center. This requirement is vague as it may be interpreted to (a) include buildings without chrome tanks; (b) prohibit passive roof vents which are otherwise permissible; and (c) prohibit openings which could be closed with overlapping plastic strip curtains, vestibules, automated roll up doors or alternative means to minimize fugitives which are otherwise permissible under PAR 1469 (e)(3). The MFA requests additional clarity in this requirement, and the above flexibility as similar to PAR 1469 (e)(3). 6-12

c) *Close Roof Openings within 30 feet* – PAR 1469 (e)(4) requires the closure of all roof openings located within 30 feet above the edge of any Tier I or Tier II Tank. The MFA fails to see the purpose of this requirement, since Tier I tanks are not considered high emitting tanks under the rule, and Tier II tanks are required to have add-on controls. As a consequence, the MFA requests that this provision be removed. 6-13

d) *Prohibition on Rooftop Ventilation* – PAR 1469 (e)(5) prohibits any device in any roof opening that pulls air from building enclosures for Tier I and Tier II tanks. The MFA is concerned that such a broad prohibition on building ventilation will create uncomfortable, and likely unsafe, working conditions for employees within such enclosures. Moreover, as we have noted in prior working group meetings, the AQMD source test staff has indicated measured fugitive emissions through rooftop vents are far below any measurements at the tank surface by several orders of magnitude, even without any add-on control devices. Consequently, such a broad prohibition on rooftop ventilation for building enclosures are not warranted. 6-14

e) *Breaks, cracks, gaps and deterioration* – PAR 1469 (e)(6) and (7) specifies monthly inspections, and a 72 hour repair of "breaks, cracks, gaps and deterioration" of building enclosures. There is no clear definition of "breaks, cracks, gaps and deterioration" in the rule, and unlikely that a clear definition is possible. As a consequence, the MFA opposes these inspection and repair requirements, given the vagueness of "breaks, cracks, gaps and deterioration", and a high risk of wide interpretation by AQMD enforcement officers for issuance of NOVs. 6-15

(9) Source Testing - PAR 1469 (k)(3) will require initial compliance source test for all facilities within 120 days from rule adoption, and then every 36 months thereafter. Alternatively, an emissions screening of a single test run may be conducted every 36 months in lieu of a full source test. The MFA requests the following changes:

a) For existing facilities, the MFA believes one (1) year should be allowed for the initial compliance source test; 6-16

b) Any compliant source test within the last 5 years (September 1, 2012) may be used to demonstrate compliance with the initial compliance test;

c) If the facility already has a compliant source test on record with the SCAQMD beyond 5 years, the initial compliance test should be an emission screening; and

d) Emission screenings be conducted **every five (5) years** thereafter, not every 3 years.

(10) Capture Efficiency Testing – PAR 1469 (k)(6) specifies routine slot velocity and smoke testing for applicable tanks with add-on control devices every 6-months, respectively. In particular, PAR 1469 specifies that a facility must "shut down" all chrome electroplating and anodizing lines, if such capture tests show a deviation of +/- 10% from the most recently approved AQMD source test or emission screening. The MFA is very concerned of such stringent limitations and shut down requirement, given the numerous factors that could impact these capture test results, such as, equipment sensitivity, testing locations, personnel handling and others. 10% is a very small margin for error which would be difficult to ensure compliance, could result in unnecessary equipment shut downs, and lead to triggering the on-ramp for a Permanent Total Enclosure (PTE) pursuant to PAR 1469 (t). 6-17

(11) Permanent Total Enclosures (PTEs) – PAR 1469 (t) specifies a trigger for PTEs for Tier II tanks based on (a) failure of a source test within 48 months; or (b) more than one incident of failure of smoke and/or slot velocity measurements. If triggered, PAR 1469 requires permit applications for a PTE within 90 to 180 days, and construction of the PTE within 12 months. In general, the MFA does not believe that PTEs are necessary to control potential Tier II tanks, as we anticipate the use of buildings, housekeeping and BMPs would be sufficient control measures. As we have noted, the use of PTEs can also be very costly and difficult to implement, especially for facilities that were not originally designed nor constructed to accommodate PTEs for existing tank operations. Due to a small margin of failure and issues noted above for smoke and slot velocity testing requirements, it is too easy for a PTE to be triggered under the proposed rule. For all these reasons, the MFA requests that a PTE on-ramp requirement be removed from the proposed rule. 6-18

(12) Notification of Incidents – PAR 1469 (p)(4)(A) requires a regulated facility to notify the AQMD within "one hour" of any failed smoke test, failed source test, exceedance of a permitted ampere-hour limit or malfunction of a non-resettable ampere-hour meter. Further, PAR 1469 (p)(4)(B) requires corrective action and a written report within seven (7) days of notification. The MFA believes these proposed notification requirements are redundant, as existing AQMD Rule 430 already covers the reporting of such incidents that result in rule or permit violations. 6-19

(13) Parametric Monitoring – PAR 1469 (m)(1)(D) adds a new requirement that the operator "shall ensure any velocity within 10 feet" of a Tier II tank with an add-on control device is "less than one-tenth of the collection slot velocity as specified in the most recent successful source test." The MFA requests that this proposed requirement be removed as it is unclear what purpose it serves. Moreover, due 6-20

to its vagueness, the requirement would be subject to wide interpretation by AQMD enforcement and likely lead to NOVs. 6-20 (cont'd)

(14) Surface Tension Testing – PAR 1469 (o)(4)(D) proposes a "daily" surface tension test for 20 consecutive days, and then every 3rd day thereafter, provided there is no violation of surface tension requirements. As noted previously, the MFA opposes such rigorous testing frequency since the current requirement of weekly surface tension testing is sufficient to ensure compliance. Moreover, there is insufficient data which warrants a more frequent testing requirement. 6-21

(15) Housekeeping – The MFA supports housekeeping measures for applicable tanks under the amended rule with few exceptions. However, the MFA opposes daily cleaning of applicable tanks and operational areas, as currently proposed in PAR 1469 (f)(4), as this places an undue burden on metal finishers. The current cleaning requirement is once per week, which we believe is sufficient housekeeping for applicable operations. 6-22

(16) Water Spraying – The MFA supports Best Management Practices (BMPs) for applicable tanks under the amended rule with few exceptions. Regarding the proposed limitations on using water sprays as currently proposed in PAR 1469 (g)(2), the MFA does not believe such limitations are necessary. Given the water spray typically occurs over rinse tanks, and that neither the parts nor rinse tank will have significant amounts of chrome laden liquid. 6-23

(17) Compressed Air Cleaning or Drying – Regarding the proposed limitations on using compressed air cleaning or drying within 15 feet of a Tier I or Tier II tank as currently proposed in PAR 1469 (g)(7), the MFA does not believe such limitations are necessary. At this point in the process, any residual rinse water on finished parts will have negligible amounts of hexavalent chrome, if any. 6-24

(18) Add-on Control Devices for Tier II Tanks – PAR 1469 (h)(4) specifies add-on control devices for Tier II tanks, and proposes a hex chrome emission limit which is to be determined. As noted above, the MFA questions the need for add-on control devices for Tier II tanks, based on the limited and inconsistent emission data collected for chrome tanks and rooftop vents. Irrespective, if an emission limit will be adopted, the MFA opposes an emission limit for Tier II tanks that would be lower than the current hex chrome emission limits specified by Table 1, which are currently applicable to existing tanks. The current state of pollution control technology has not significantly changed since the prior amendments to Rule 1469, and therefore any lower emission limits would not be justified. 6-25

The MFA and its representatives look forward to continued discussions on the amended rule with the AQMD. Thank you and we look forward to your response.

Sincerely,

Wesley Turnbow
President

cc: Barry Groveman, Musick Peeler
Ryan Hiete, Musick Peeler
Susan Nakamura, SCAQMD (via email only)
Kurt Wiese, SCAQMD (via email only)

Responses to Metal Finishing Association of Southern California (MFASC) Comment Letter, submitted 11/XX/17

6-1 Response: Please see Response to Comment 1-1.

6-2 Response: Please see Response to Comment 1-2 and 1-12.

6-3 Response: Please see Responses to Comment 1-7 and Comment 2-3. The use of 1 ng/m^3 in recent Orders for Abatement were established based on the impacts of the subject facilities' hexavalent chromium emissions on the nearest sensitive receptors. PAR 1469 does not include such a standard.

6-4 Response: PAR 1469 applies to facilities performing chromium electroplating and chromic acid anodizing. Proposed rule requirements are specific to tanks at these facilities. If facilities that do not perform chromium electroplating or chromic acid anodizing have process tanks that contain chromium, these other facilities are not subject to the requirements of PAR 1469. However, they are subject to Rule 1426, and under a future rulemaking for PAR 1426, additional requirements may be needed.

6-5 Response: PAR 1469 includes a definition for building enclosure under paragraph (c)(11). The language regarding breaks, gaps, cracks and deterioration was removed from the definition.

6-6 Response: Please see Response to Comment 2-1.

6-7 Response: Please see Response to Comment 2-6.

6-8 Response: The comment refers to Tier II Tanks. Most of these tanks are now considered Tier III Tanks, with an intermediate designation of Tier II for tanks that meet the definition of paragraph (c)(58). Please see Response to Comment 2-7.

6-9 Response: The prohibition on air sparging that was a part of the first proposal for PAR 1469 has been removed.

6-10 Response: The requirements for freeboard height have been removed from PAR 1469.

6-11 Response: The concept for the requirement for a 3.5% threshold for openings as a percentage of building envelope is based on EPA Method 204. PAR 1469 requires the lower 3.5% threshold, relative to the 5% allowance for a PTE under EPA Method 204, since building enclosures are not required to be kept under negative air pressure and vented to APC systems. PAR 1469 requires housekeeping and best management practices such as limiting cross-draft and prohibiting openings directly facing the nearest sensitive receptor, excluding schools, within 1,000 feet and directly facing the nearest school within 1,000 feet to minimize exposure to sensitive populations in nearby communities.

6-12 Response: Paragraph (e)(3) has been modified to allow the requested flexibility as allowed under paragraph (e)(2). Additional clarification has been added under subdivision (e) to specifically state that the provisions apply to building enclosures where Tier II or III Hexavalent Chromium Tanks are operated. Paragraph (e)(3) requires enclosure openings that directly face the nearest sensitive receptor, excluding schools, within 1,000 feet and directly face the nearest school within 1,000 feet to be closed.

6-13 Response: The proposal has been revised to allow openings that are not within 15 feet from a Tier II or III Tank. PAR 1469 requires closure of all enclosure openings in the roof that are located within 15 feet from the edge of any Tier II or Tier III Hexavalent Chromium Tank, except enclosure openings in the roof that are used to allow access for equipment or parts, or provide intake air or circulation air for a building enclosure that does not create air velocities that impact the collection efficiency of a ventilation system for an add-on air pollution control device. Tier I Tanks are not subject to the requirements of subdivision (e). The modified language for these requirements is included in paragraph (e)(4).

As an alternative to permanently closing openings, facility owner/operators have the option of venting those openings through HEPA controls.

6-14 Response: Please see Response to Comment 6-13. PAR 1469 only requires that roof openings within 15 feet of the edge of a Tier II or III Hexavalent Chromium Tank be closed or equipped with HEPA filtration to prevent hexavalent chromium emissions. During site visits to plating and anodizing facilities, staff observed steam emitting from hexavalent chromium tanks that escaped building enclosures through overhead rooftop vents, thus serving as a source of hexavalent chrome emissions. The SCAQMD staff consulted with CAL-OSHA, and it was determined that no requirement in PAR 1469 conflicts with a requirement of OSHA or CAL-OSHA. PAR 1469 includes a provision that allows facilities to implement alternative requirements to closing doors and other building enclosure provisions if PAR 1469 conflicts with OSHA or CAL-OSHA requirements for worker safety.

6-15 Response: Since the comment was submitted, paragraphs within subdivision (e) have been renumbered. Paragraphs (e)(5) and (e)(6) have been modified to add clarity. Paragraph (e)(5) references repairs for a breach. The proposal includes a definition for building enclosure under paragraph (c)(11). Provisions to inspect the building enclosure for breaks, cracks, gaps, and deterioration have been removed from PAR 1469.

6-16 Response: Source testing requirements have been modified since this comment was received. PAR 1469 has been changed to require a subsequent source test after the initial sources test every 60 months (five years) for facilities with permitted throughput of more than 1,000,000 amp-hrs/yr and every 84 months (seven years) for facilities with permitted throughput of less than 1,000,000 amp-hrs/yr, provided all capture efficiency tests conducted by the owner or operator within 48 months of the most recent successful SCAQMD-approved source test did not result in a failed measurement, requiring a tank to be shut down and all applicable inspection and maintenance requirements (specified in Appendix 4) were conducted. PAR 1469 allows the use of a source test conducted after September 1, 2015 to be used to demonstrate compliance with the initial source test requirement. In addition, an emissions screening test is allowed in lieu of a full source test, if the previous source test was conducted after January 1, 2009.

6-17 Response: Please see Response to Comment 2-12.

6-18 Response: Please see Response to Comment 1-11.

6-19 Response: Please see Response to Comment 2-13.

6-20 Response: The referenced subparagraph has been removed from the PAR 1469 rule proposal.

6-21 Response: Please see Response to Comment 2-15.

6-22 Response: Please see Response to Comment 1-9.

6-23 Response: Please see Response to Comment 1-10.

6-24 Response: Please see Response to Comment 2-18.

6-25 Response: Please see Response to Comment 2-20.

VERNE'S CHROME PLATING, INC
1559 W. EL SEGUNDO BLVD.
GARDENA, CALIF. 90249

Neil Fujiwara
AQMD

You invited me to call you, to discuss my concerns about upcoming changes with rule 1469. I thought it was better put in writing, for your consideration.

I am probably the smallest decorative chrome plating shop in your control area. I have one small plating line consisting of 1 cleaning tank, 1 copper, 1 nickel, and 1 chrome tank. I also have the necessary strip and water tanks to make it work. That's it. My entire facility is in a 50 foot by 60 foot building. We are in your less than 20,000 amp-hour per year category for the chrome tank, using only a fraction of that!

Starting in 1980 I once peaked at 8 full time employees. This small shop is still providing a living for 3 families, but just barely now. I hope you will be making exceptions for small existing business like mine.

My 3 main concerns are as follows:

1. Ventilation restrictions……The cleaner tank and the nickel tank consist of about 1300 gallons, at about 150 degrees. They give off a lot of heat and harmless steam. To make the workplace bearable, 2 small fans move air out the back of the building, drawing cooler dry air in the front. If you take that away, the heat and humidity will make working here impossible. Cal-OSHA has fined me for not wearing goggles, armpit length gloves, aprons, and full body coverings. We will be dropping from heat exhaustion here. You want no ventilation within 30 feet of the chrome tank. My entire plating area is 19 by 48 feet. Everything is within 30 feet of everything. 7-1

2. A cover on the chrome tank….If you want a cover when NOT in use, no problem, but what is the point of that? I can not operate the tank with a cover on it. A decorative shop puts 10 parts in the chrome tank then turns on the current. The smallest parts come out first, then power is increased, then mid size parts come out, then power is increased, then larger parts come out, then power raised to full on the last part. That will throw plating in a low current density area. This can NOT be done under a cover. I can't do parts one at a time, covering and uncovering with each tiny part. 7-2

3. Raised platforms changed to fiberglass.....I have wood walkways, covered in roofing paper. I am a 100% dry floor shop with NO spillage of solutions (chrome or otherwise) on my floors or wood platforms. Any inspector can easily see this. Parts from my chrome tank go directly to a drag out tank adjacent to the chrome tank with plastic shielding preventing even a drop from hitting the floor, or wood platforms. Forcing a change over to fiberglass will accomplish nothing, and be a huge expense, not warranted by the minimal income this business can continue to produce. 7-3

Please consider restrictions on all new construction, but allow the few of us left in this business to continue for the little time we have left. Attrition will solve your decorative chrome plating problem in just a few more years. 7-4

Ronald L Verne
Verne's Chrome Plating, Inc.

Ronald L Verne

Responses to from Verne's Chrome Plating, Inc Comment Letter (submitted 12/1/17)

7-1 Response: Please see Response to Comments 6-13 and 6-14. Openings that would provide ventilation within the building include the allowance for openings totaling 3.5% of building enclosure envelope. PAR 1469 also includes a provision that allows facilities to implement alternative requirements to closing doors and other building enclosure provisions if PAR 1469 conflicts with OSHA, CAL-OSHA or local municipal code requirements for worker safety.

7-2 Response: Chrome plating tanks are already required to be controlled by an air pollution control technique such as the use of chemical fume suppressants or add-on air pollution controls. Tank covers are allowed as a control option for Tier II Tanks. However, electroplating and chromic acid anodizing tanks are required to be controlled by an air pollution control technique as identified in PAR 1469.

7-3 Response: PAR 1469 does not require that walkways be constructed of fiber glass and allows for walkways that are made of wood.

7-4 Response: SCAQMD typically establishes requirements for both new and existing facilities in order to address emissions from both sources. PAR 1469 applies to both existing and new facilities.

From: Bruce Greene [mailto:Bruce.Greene@hmfgroup.com]
Sent: Friday, December 1, 2017 3:23 PM
To: Eugene Kang <EKang@aqmd.gov>
Cc: Susan Nakamura <SNakamura@aqmd.gov>
Subject: Hixson Metal Finishing - PAR 1468 Comments

Eugene,

Please see attached for Hixson's comments on PAR 1469. Your consideration of these would be greatly appreciated.

If you have any questions or comments, please feel free to contact me.

Thanks

Bruce Greene
Environmental/Health & Safety

Hixson Metal Finishing
829 Production Place
Newport Beach, CA 92663
Direct: 949.722.3459
Office: 800.900.9798
www.HMFgroup.com

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PAR 1469 Analysis

(c)(30) – Fugitive Emission – The definition indicates any emission that could "Potentially" contain hex chrome. Technically that could be almost anything. Concrete dust, concrete mix, dirt, diesel emissions, etc. As this is used throughout the rule this could potentially led to inspectors widening the scope to the entire facility or even construction areas. This has been addressed in the revised rule. 8-1

(c)(35) – Low Pressure Spray Nozzle – If contained within a tank (spray rinse tank) this should not be required. A new definition of a Spray rinse tank may be required if this is exempted. A spray rinse tank is a tank that uses one or more nozzles to pre-rinse parts to remove a majority of the plating/anodizing solution from the parts. The parts are then rinsed in an immersion rinse tank. 8-2

(c)(56) – Tank Process Area – Would a PTE be considered the nearest wall of a building enclosure. We have a Tier II tank that is within 1 foot of the wall of a PTE. If that wall is not considered a Building Enclosure wall the tank process area would extend 30 feet out into a racking and oven drying area. If the PTE is considered a building wall, call it be added to the definition?. This was been clarified to include a PTE 8-3

(c)(62) – Weekly – Can weekly be changed to once per calendar week?. This has been changed to calendar week 8-4

(d)(3) – Air Sparging – We feel that if the tanks are vented to air pollution controls and within a PTE with negative air, the prohibition on air sparging should be lifted. – This has been changed to allow air sparging if vented to a pollution control device. 8-5

(d)(4) – Freeboard Height – We feel that the freeboard height should be allowed to be at 4 inches if the tanks are ventilated to air pollution controls and are within a PTE with negative air. – No exception for PTE has been added. Also, has there been a determination as to the 6-8 inches 8-6

(e)(1), (e)(2), and (e)(3) – These requirements should be waived if all Tier I and Tier II processing tanks are in a PTE with negative air. – We still feel that these requirements should be waived if the tanks are within a PTE. Would not the ultimate goal to be that all processing tanks are contained within a PTE. Would this not provide an incentive to do so. 8-7

(e)(8) – OSHA requirements. There are some additional requirements such as building and fire codes that may also have to be addressed. These should be added if possible. 8-8

(f)(1) – Storage – I think the intent of this section was to make sure that the chromic acid power/flake is stored in closed containers in an enclosed building/structure but as written this could make all materials that contain chromium (Paint, Concrete mix, Paint Racks, Paint filters, Stainless steel, even painted/processed parts awaiting shipment etc.) be required to be stored in a closed container inside a enclosed storage area. This could, technically, allow an inspector to expand the scope of the rule to many other processes. 8-9 (g)(1)(b) – Dragout – In manually operated process line some dragout will always be present. We have installed drip trays between the tanks that will catch all dragout and return it to the tanks. We have also installed catch pans in the walkways that would catch any dragout that may fall to the floor. These catch pans are equipped with drains that lead to our waste treatment system so that can be easily cleaned at the end of each shift. Would this setup be in ~~complinace~~compliance with this rule section? Also, this section seems to contradict sections (f)(3) and (f)(4) that gives a 1 hour maximum for clean up and a daily clean up requirement. – Drip tray or containment device has been added. 8-10

(g)(7) – Use of compressed air – This requirement should be exempted if the tanks and drying operation are within a PTE with negative air. – PTE exemption has been added 8-11

(h)(4) (A) – What if the scrubbed tanks are a combination of electrolytic and non-electrolytic? What standard applies? Would this require 2 separate source tests? 8-12

(h)(4)(A)(iii) – mg/hr – This is still to be determined. Any idea on the requirement? – Added a requirement of 0.20 mg/hr. This limit does not seem to take a number of factors into account such as tank size (square feet of surface area), the CFM of the pollution control equipment or the number of tanks being vented. Would it be better to determine a limit based on mg/dscf. 8-13

(h)(4)(B)(ii) – The section has a reference back to the same section, I think this is a typo and should reference back to (h)(4)(B)(i)? 8-14

(h)(4)(C) – This section seems to allow an exemption for scrubbers on tier II tanks as long as it meets the 0.0015 mg/amphr or 0.20 mg/hr. Is this the case? 8-15

(h)(5) – Ventilation Design – Our control equipment has already been designed, permitted and installed. We assume that our systems, as long as they pass source test would be in compliance with this requirement. – Can we add in this section "or if approved by the Executive Officer" 8-16

(k)(2)(B) – Source Testing for covered Tier II tanks – This seems to contradict section (h) that indicates that you need to prove that emissions are below 0.0015 mg/amphr or 0.20 mg/hr. How can you accomplish this without a initial source test? 8-17

(k)(3)(A) – Source Tests – Could the 36 month time period be extended if all process tanks are contained in a PTE with negative air? Since we have completed source tests prior to adoption of the rule when would the next 36 months be? On the anniversary date of the source test, 3 years after we receive results or 3 years after adoption of PAR 1469? – Can we please get some more information when the clock starts ticking on the 36 months? We should have all of our source tests complete by rule adoption. Is the timeline 36 months after rule adoption or 36 months from the testing date. 8-18

(k)(3)(B) – Source Tests – Since we have already completed source testing that was approved by the district, we assume that we would be in compliance with this section? – Can "or if approved by the Executive Officer" be added 8-19 (k)(3)(C)(iii)(C) – These emission standards have not yet been determined – Please see section (h)(4)(A)(iii) above 8-20

~~(k)(4)(A) – Source Test Protocol – Sorry not sure what this section means. Can we please discuss?~~

(k)(6)(A)(ii)(Table 4) – Push Air Manifold Pressure TBD. Any additional info? – This appears that it will be tied to the source test. Is this correct? 8-21

(m)(1)(C)(Table 5) – This means a gauge needs to be installed at each push header? Still not totally clear but this seems to mean that a pressure gauge will have to be installed in each push header and an anemometer will have to be installed at some point in the duct work of the pollution control system. Is this correct? 8-22

(m)(1)(D) – How is this to be measured? We also feel this requirement should be waived if the processing tanks are within a PTE with negative air. – Not Addressed. We would still not be able to pass this section of the rule in general plate without removing the tank or dialing back the CFM on the PTE. We still feel there should be an exemption for a PTE 8-23

(n)(2) – Indicates mechanical fume suppressants and refers to table 4-2 of appendix 4. There is no requirement in the table for pollyballs. There is a requirement in section (o)(4)(E) of the rule and this requires daily inspection 8-24

(o)(4)(C) – Pressure Measurements – What applicable pressure measurements is this referring too? – Table 5 subdivision (m) – Push air, Velocity and Static pressure of scrubber. Could it be added that we could measure FPM in order to comply? 8-25

Appendix 3 – Ongoing Compliance Report – Will a new report be provided by AQMD? - Yes 8-26

Appendix 4 – Table 4-1, Collection Slots and Air Manifolds - There is still a requirement for all the holes in the push air manifold to be tested once per month with an anemometer. I though this ~~war~~ was changed for a gauge to measure the header and additional measurements every 180 days. I think that this applies to the velocity of the inlets on the hoods for the scrubber. Not the individual holes in the push air header. Is this correct? 8-27

Appendix 8, section 3 – Tesing Conditions – The smoke test now has to be conducted with parts being processed in the tank. Can this be stated in a way that would allow for test panels, racks or scrap parts can be used. Actual parts may not always be available. 8-28

Appendix 8~~9~~ – Smoke tests – Does AQMD have a recommendation on the smoke devise to use since the Tel-Tru sticks and no longer available. We have been using the Drager Air Flow Tester. Will this be compliant? – No information was provided. 8-29

Responses to Hixson Metal Finishing Comment Letter, submitted 12/1/17

8-1 Response: The definition for fugitive emissions has been modified under PAR 1469 paragraph (c)(28), as follows: *". . .emissions generated from the operations at the owner or operator's facility, including solid particulate matter, gas, or mist, potentially containing hexavalent chromium that becomes airborne by natural or man-made activities, excluding particulate matter emitted from an exhaust stack."*

8-2 Response: The definition of low pressure spray nozzles is included in PAR 1469 paragraph (c)(34) as *"a water spray nozzle capable of regulating water pressure to 35 pounds per square inch or less"* and the allowable usage for low pressure spray nozzles is included under paragraph (g)(2) as follows: *". . .the owner or operator of a facility that conducts chromium electroplating or chromic acid anodizing operations shall not spray rinse parts or equipment that were previously in a Tier II or Tier III Hexavalent Chromium Tank unless the parts or equipment are fully lowered inside a tank where the overspray and the liquid is captured inside the tank …"*.

8-3 Response: A tank process area was clarified under paragraph (c)(55) to be: *". . .the area in the facility within 15 feet of any Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s) and any associated process tanks, or to the nearest wall in a building enclosure or permanent total enclosure, whichever is closer"*.

8-4 Response: The definition for weekly is: *". . . at least once every seven calendar days"*. PAR 1469 does not amend this definition.

8-5 Response: The prohibition of air sparging has been removed from PAR 1469.

8-6 Response: The requirements for freeboard height have been removed from PAR 1469.

8-7 Response: The requirements of paragraph (e)(1), in particular the allowable enclosure openings as a percentage of the building envelope are applicable to both building enclosures and PTEs. The requirements of paragraphs (e)(2) and (e)(3) are applicable only to building enclosures; not to PTEs. Please also see Responses to Comments 18-6 and 18-7.

8-8 Response: Paragraph (e)(6) has been modified to recognize possible conflicting requirements by OSHA, CAL-OSHA or other municipal codes or agency requirements directly related to worker safety. This modified language requires notification to the Executive Officer of requirements *". . . that cannot be complied with due to conflicting requirements set forth by the federal Occupational Safety and Health Administration (OSHA), California Division of Occupational Safety and Health (CAL-OSHA), or other municipal codes or agency requirements directly related to worker safety"*.

8-9 Response: The requirement to store other substances that may contain hexavalent in a closed container in an enclosed storage area when not in use is an existing requirement. PAR 1469 does not amend the requirement. This requirement only pertains to materials that are used in the process of chromium electroplating or chromic acid anodizing, not to concrete or stainless steel.

8-10 Response: Paragraph (g)(1) has been revised to allow liquid to be captured by a drip tray or other containment device. The requirement under paragraph (f)(3) requires spills to be cleaned up or contained using a drip tray within one hour. The commenter's arrangement of drip trays and catch pans would be sufficient to contain spills that fall on the drip trays and are directed to the catch pans. However, spills that are not captured by the drip trays are required to be cleaned up within one hour. The language of paragraph (f)(4) requires surfaces potentially contaminated with hexavalent chromium to be cleaned weekly.

8-11 Response: Paragraph (g)(6) has been reworded to read: *"…the owner or operator shall not conduct compressed air cleaning or drying operations within 15 feet of any Tier II or Tier III Hexavalent Chromium Tank(s) unless: A) A barrier separates the compressed air cleaning or drying operation from the compressed air cleaning or drying operation. A tank wall may function as a barrier as long as parts are compressed air cleaned or dried below the lip of the tank; or B) Compressed air cleaning or drying operations are conducted in a permanent total enclosure."* Therefore, compressed air cleaning is allowed in a PTE.

8-12 Response: PAR 1469 requires that existing facilities that vent both electrolytic and non-electrolytic tanks to an air pollution control device to comply with either a 0.0015 mg/amp-hr or 0.0011 mg/amp-hr limit based on whether the facility is existing or new. An owner or operator would need to only conduct one source test per air pollution control device.

8-13 Response: PAR 1469 clause (h)(4)(A)(iv) was modified based on stakeholder feedback to allow an emission rate based on the surface area of tanks for larger ventilation systems. The surface area is based on Tier III Tanks and other tanks required to be controlled by the SCAQMD Permit to Operate.

8-14 Response: Clause (h)(4)(B)(ii) references subparagraph (h)(4)(B), which specifies the schedule for when permit applications for add-on air pollution control systems must be submitted.

8-15 Response: PAR 1469 allows owners or operators to demonstrate that non-electroplating or non-anodizing Tier III Tanks uncontrolled emissions are less than the emissions limits specified in paragraph (h)(4). An owner or operator who successfully demonstrates that uncontrolled emissions are less than the applicable emission standards are not required to vent the emissions from the subject tank to an add-on air pollution control device. This does not include chromium electroplating or chromium anodizing tanks that will be required to comply with paragraph (h)(2) or (h)(3).

8-16 Response: The capture velocity specified in the most current edition (i.e., at the time the SCAQMD permit application was deemed complete by SCAQMD) of *Industrial Ventilation, A Manual of Recommended Practice for Design*, are considered to be the minimum allowable velocity for design of an air pollution control system. As such, Executive Officer discretion is not necessary in this paragraph.

8-17 Response: An initial source test is required pursuant to subparagraph (k)(3)(A).

8-18 Response: Please see Response to Comment 2-11.

8-19 Response: A source test which was previously approved by SCAQMD may be used satisfy the initial source test requirement if conducted after January 1, 2015.

8-20 Response: The emission limits in the comment are identified in subdivision (h). Please also see Response to Comment 8-13.

8-21 Response: The allowable push air manifold pressure is based on the pressure range determined during the source test.

8-22 Response: PAR 1469 will require a static pressure gauge to monitor the push manifold pressure. A flow meter or static pressure gauge will be required in the duct work of the air pollution control system to monitor static pressure or airflow velocity.

8-23 Response: The requirement for a minimum air velocity within 10 feet of a hexavalent chromium tank has been removed from PAR 1469. Regarding the comment on an exemption from parameter monitoring within a permanent total enclosure (PTE), PAR 1469 requires all parameter monitoring irrespective of whether the tank is located within a PTE.

8-24 Response: The requirements of Table 4-4 are specific to Inspection and Maintenance requirements for sources using chemical or mechanical fume suppressants.

8-25 Response: PAR 1469 allows pressure to be measured in inches of water column and airflow velocity measured in actual cubic feet per minute.

8-26 Response: The current requirements of new Ongoing Compliance Status and Emissions Reports are provided in Appendix 3 of PAR 1469.

8-27 Response: The requirements for Inspection and Maintenance Requirements are shown in the table below in Response to Comment 8-28.

8-28 Response: Table 4-2 in Appendix 4 has been modified to require the tank to be tested during typical operating conditions.

Control Technique/Equipment	Inspection and Maintenance Requirements	Frequency
Temperature Gauge	1. Install and maintain per manufacturer's specification at each Tier I, II, and III Hexavalent Chromium Tank.	1. Per manufacturer.
	2. Calibrated or confirmed to be accurate.	2. Once per year.
Collection Slots and Push Air Manifolds for Push-Pull Systems	1. Visually inspect slots and push air manifolds to ensure that there are no obstructions or clogs.	1. Once per week.
	2. Clean slots or push air manifolds.	2. Once every 180 days.
	3. Measure slot velocity of each slot and pressure at each push air manifold using a hot-wire anemometer, vein anemometer, or approved device	3. Once every 180 days.
Air Flow Gauges	Install and maintain per manufacturer's specifications.	Per manufacturer

8-29 Response: Staff does not make a recommendation for the smoke device to use during smoke tests.

COUNTY OF LOS ANGELES
Public Health

BARBARA FERRER, Ph.D., M.P.H., M.Ed.
Director

JEFFREY D. GUNZENHAUSER, M.D., M.P.H.
Interim Health Officer

CYNTHIA A. HARDING, M.P.H.
Chief Deputy Director

ANGELO J. BELLOMO, REHS, QEP
Deputy Director for Health Protection

TERRI S. WILLIAMS, REHS
Director of Environmental Health

BRENDA J. LOPEZ, REHS
Assistant Director of Environmental Health

5050 Commerce Drive
Baldwin Park, California 91706
TEL (626) 430-5374 □ FAX (626) 813-3000

December 8, 2017

Wayne Nastri, Executive Director
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Re: Proposed Amended Rule 1469, Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

Dear Mr. Nastri,

The Los Angeles County Department of Public Health (DPH) appreciates this opportunity to comment on the Proposed Amended Rule 1469 regarding hexavalent chromium emissions from hexavalent chromium electroplating and chromic acid anodizing operations. We support the South Coast Air Quality Management District's (SCAQMD) policy and enforcement efforts over the last year to reduce chromium emissions in the Los Angeles Basin. In October 2016, SCAQMD discovered that Anaplex, a chromium electroplating facility in the City of Paramount, was responsible for ambient chromium emissions up to 400 times higher than those reported for other urban areas in Los Angeles. SCAQMD and DPH coordinated their enforcement efforts to require Anaplex to reduce its chromium emissions to below 1 ng/m^3. In this case, swift abatement action was necessary due to the well-known carcinogenicity of hexavalent chromium and proximity of residential areas. Hexavalent chromium compounds have been shown to cause lung cancer in humans when inhaled at high concentrations for long periods of time.

DPH is concerned that the potential for elevated hexavalent chromium emissions extends well beyond the borders of the City of Paramount and concentrates in communities already facing many other social, economic and environmental burdens. There are a total of 87 chromium electroplating and chromic acid anodizing operations with SCAQMD permits in Los Angeles County, and the majority of these are located in the most burdened areas of Los Angeles, as shown by the red shading in the attached map. The Proposed Amended Rule 1469 presents a golden opportunity for facilities to institute the necessary emission controls and prioritize the health of surrounding neighborhoods and 9-1

Page 2
December 8, 2017
Wayne Nastri, Executive Director

chromium workers. After review of the Proposed Amended Rule 1469, DPH recommends that SCAQMD revise the Rule to include the following requirements: 9-1 (cont'd)

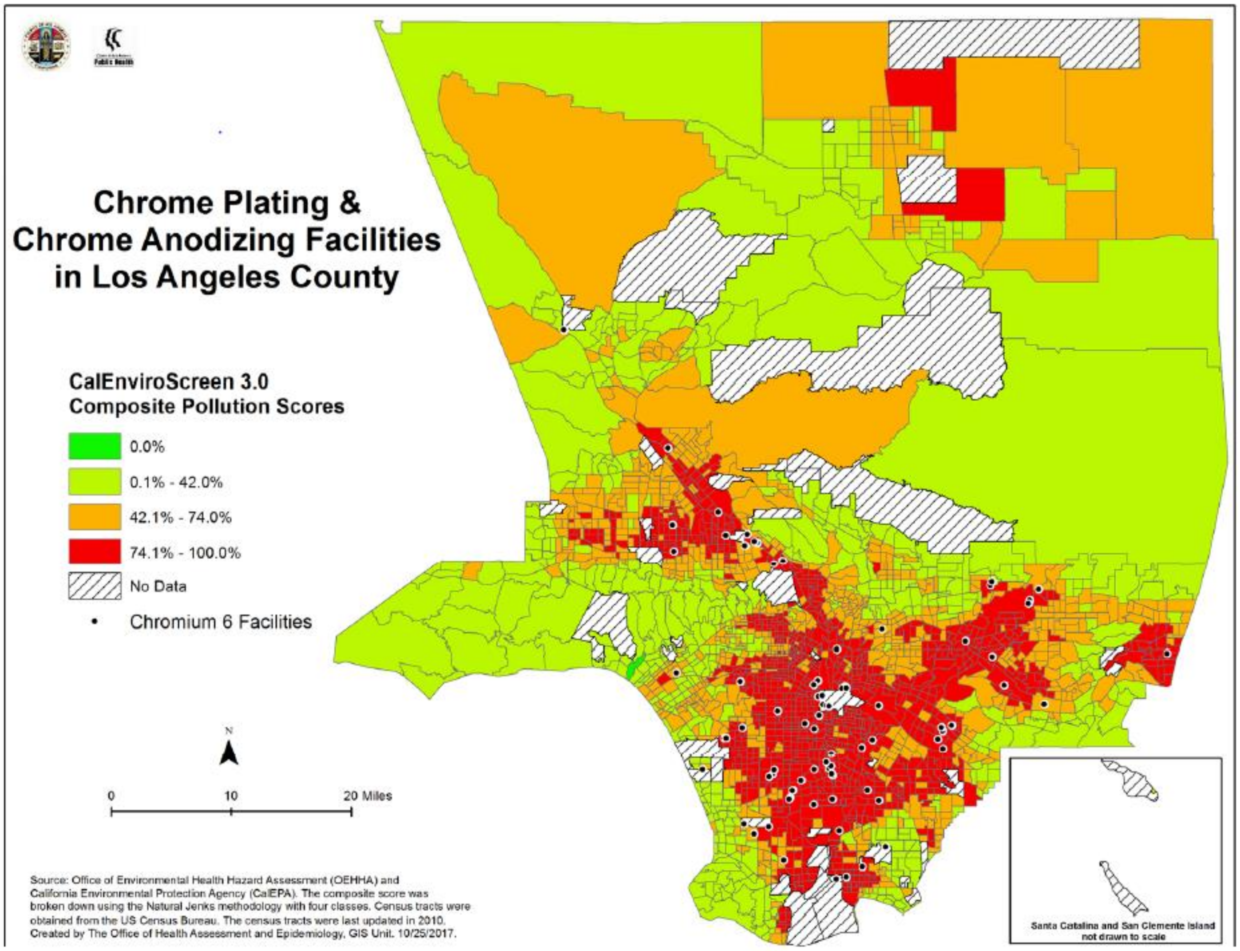
- Consistent with recent European Union legislation, ban hexavalent chromium for decorative purposes. 9-2
- Periodic fenceline air monitoring to facilitate continued assessment of ambient hexavalent chromium emissions across Los Angeles County. 9-3
- Prior to using chemical fumes suppressants that do not contain perfluorooctanesulfonic acid (PFOS), which were banned in the Federal NESHAPs Rule, comprehensive toxicity assessments must be completed and demonstrate the safety of the proposed alternative chemicals. Available toxicity assessments by the Office of Environmental Health Hazard Assessment raised serious concerns about the safety of these chemicals (see attached). It is essential these alternative chemicals not be relied upon as a means to control emissions of hexavalent chromium in plating tanks unless and until their safety has been demonstrated. 9-4
- The current version of the proposed rule provides for additional protections for schools situated within 100 feet from a plating facility. While we support additional protections for schools and other sensitive land uses in proximity to plating facilities, we believe the distance of 100 feet is insufficient. These additional protections are warranted for any sensitive population in close proximity to emissions of hexavalent chromium. 9-5
- Establish a mandatory consultative process with the California Division of Occupational Safety and Health's (Cal/OSHA) to ensure adequate worker protection. 9-6

Considering both the toxicity of hexavalent chromium and the proximity of chromium facilities to Los Angeles County residents, we urge the SCAQMD to ensure that the Proposed Amended Rule 1469 requires the best technology available to prevent chromium emissions from impacting local air quality. 9-7

Sincerely,

Cyrus Rangan, M.D., F.A.A.P., F.A.C.M.T.
Director, Toxicology & Environmental Assessment
Environmental Health Division, Department of Public Health

Enclosures: (2)


Chrome Plating &
Chrome Anodizing Facilities
in Los Angeles County
CalEnviroScreen 3.0
Composite Pollution Scores
0.0%
0.1% - 42.0%
42.1% - 74.0%
74.1% - 100.0%
No Data
Chromium 6 Facilities
N
0
10
20 Miles
Source: Office of Environmental Health Hazard Assessment (OEHHA) and California Environmental Protection Agency (CalEPA). The composite score was broken down using the Natural Jenks methodology with four classes. Census tracts were obtained from the US Census Bureau. The census tracts were last updated in 2010. Created by The Office of Health Assessment and Epidemiology, GIS Unit. 10/25/2017.
Santa Catalina and San Clemente Island
not drawn to scale

Responses to County of Los Angeles Department of Public Health (Cyrus Rangan) Comment Letter, submitted 12/8/17

9-1 Response: Implementation of PAR 1469 will reduce hexavalent chromium emissions from tanks that are currently not regulated. In addition, provisions for building enclosures, parameter monitoring, and periodic source testing will help to reduce exposure to hexavalent chromium to nearby communities. PAR 1469 includes limitations and restrictions for facilities located near sensitive receptors. Examples include:

1. Close any building enclosure opening that directly faces and opens towards the nearest:
    a. Sensitive receptor, excluding schools, located within 1,000 feet; and
    b. School located within 1,000 feet.
2. Ensure a new facility is not located within 1,000 feet from the boundary of a sensitive receptor, a school under construction, or any area that is zoned for residential or mixed use;
3. Expedited requirement to construct a permanent total enclosure (if triggered), if property line of the electroplating or anodizing facility is within 500 feet of the property line of any sensitive receptor or school; and
4. Prior to approval of alternative compliance method for emissions control, demonstrate that the facility is at least 75 feet from a sensitive receptor.

9-2 Response: PAR 1469 incentivizes facilities that make an early commitment to phase out hexavalent chromium from their process by delaying requirements to install add-on air pollution controls on Tier III Tanks. If hexavalent chromium is phased out according to the approved phase-out plan, the facility will not incur costs for controls as they will no longer be required to install add-on air pollution controls. There are certain applications for decorative plating where it is necessary to use hexavalent chromium for quality or appearance, or to meet a customer specification tied to a long-term contract. The adoption resolution for PAR 1469 will have a commitment to conduct a study on alternatives to hexavalent chromium. Please refer to Chapter 1 for more information on the European Union's hexavalent chromium ban and see Response to Comment 3-8.

9-3 Response: Although ambient monitoring provisions are not included in PAR 1469, a separate rule for ambient monitoring is on SCAQMD's Rule Forecast for 2018. PR 1480 – Air Toxic Metals Monitoring will provide a comprehensive approach to monitoring of air toxics at all facilities emitting toxic air contaminants, not only hexavalent chromium emitting facilities. Therefore, it is more appropriate to consider monitoring within the context of PR 1480 instead of within PAR 1469. Please also see Response to Comment 1-7.

9-4 Response: Under the existing requirements of Rule 1469, certain facilities with low throughput are allowed to use a certified wetting agent chemical fume suppressant as the sole means of control instead of installing air pollution control equipment. PAR 1469 includes provisions which require SCAQMD and CARB to conduct tests to determine if these non-PFOS wetting agent chemical fume suppressants can be certified.

Beginning July 1, 2021, facilities may only add a wetting agent chemical fume suppressant that is certified based on a revised process conducted by SCAQMD and CARB. This date will allow sufficient time for facilities to implement alternatives, manufacturers to potentially reformulate chemical fume suppressants, and SCAQMD staff to certify the wetting agent chemical fume suppressant.

Staff has added a provision that the Executive Officer in consultation with CARB may approve an alternative to a wetting agent chemical fume suppressant that is as equally effective as a certified chemical fume suppressant pursuant to paragraph (l)(2) of PAR 1469. This approach will allow facilities to use an alternative to a wetting agent chemical fume suppressant if emissions testing conducted by SCAQMD demonstrates that the alternative is as equally effective as a certified wetting agent chemical fume suppressant. Additionally, the owner or operator of a facility that opts to use an alternative to a wetting agent chemical fume suppressant will be required to comply with conditions that are specified during the approval process.

The alternative to a wetting agent chemical fume suppressant would be available to only the smallest plating facilities that are currently allowed to use chemical fume suppressants. This approach will provide a cost savings, given that SCAQMD staff will conduct the necessary emissions testing. Also, similar to the use of certified chemical fume suppressants, no further emissions testing would be required, provided the operator complies with the conditions of the certification of the alternative.

PAR 1469 proposes to allow the continued use of certified wetting agent chemical fume suppressants during the revised certification process to protect workers in chromium electroplating and chromic acid anodizing facilities that may otherwise be exposed to emissions of hexavalent chromium from electrolytic tanks operated without APC systems. Chemical fume suppressants are a proven and highly effective method of reducing emissions from electroplating operations, thereby protecting workers from emissions of hexavalent chromium, a known human carcinogen.

The following documents submitted by the commenter as an attachment to the comment letter were considered during the rule development process:

1. Budroe, J. (2017, June 30). Toxicity of the Fume Suppressant Sodium Diamyl Sulfosuccinate [Letter to Robert Krieger].
2. Silva, R. M. (2015). *6:2 Flurotelomer Sulfonate (FTS/FTSA) and Perfluorohexanoic Acid (PFHxA) Toxicity Review* (Office of Environmental Health Hazard Assessment). Sacramento, CA: OEHHA.
3. Silva, R. M. (2015). *Summary of Reproductive and Developmental Effects of Perfluorohexane Solfonate (PFHxS)* (Office of Environmental Health Hazard Assessment). Sacramento, CA: OEHHA.
4. Silva, R. M. (2016). *6:2 Fluorotelomer Alcohol (FTOH) Toxicity Review (Office of Environmental Health Hazard Assessment)*. Sacramento, CA: OEHHA.

9-5 Response: PAR 1469 provides protections based on distance for both schools and sensitive receptors. For example, under paragraph (e)(3), facilities are required to close any building enclosure opening that directly faces and opens towards the nearest school that is located within 1,000 feet, as measured from the property line of the school to the building enclosure opening, except for the movement of vehicles, equipment or people. The same requirement applies to the nearest non-school sensitive receptor located within 1,000 feet.

9-6 Response: Mandatory consultations are not established in rules. However, staff has been in communication with Cal-OSHA in regard to issues such as indoor heat and the appropriate ventilation air required for chromium electroplating and chromic acid anodizing facilities. As a practice, staff communicated with Cal-OSHA as well as other agencies, as necessary, during the rulemaking process.

9-7 Response: Best available control technology for point source controls of hexavalent chromium from electroplating tanks, chromic acid anodizing tanks, and Tier III Tanks with the potential for significant emissions includes a collection hood under negative pressure, vented to air pollution control with a final control stage equivalent to HEPA controls or better. This is the level of control proposed by PAR 1469.

VALLEY–TODECO, INC.

12975 BRADLEY AVENUE, SYLMAR, CALIFORNIA 91342 USA • TEL (818) 367-2261 • FAX (818) 364-6036

UPS Tracking Number:
1Z 104 3RR 01 6907 6579

December 11, 2017

Mr. Neil Fujiwara
Planning, Rule Development and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: Comments on SCAQMD Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

Dear Mr. Fujiwara:

Valley-Todeco, Inc. (Valley-Todeco) is pleased to submit the following comments on the November 17, 2017 preliminary draft rule language of South Coast Air Quality Management District's (SCAQMD) Proposed Amended Rule (PAR) 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations. Our California operations include a facility in Sylmar, California that would be directly impacted by PAR 1469.

Valley-Todeco is a wholly-owned subsidiary of Arconic Inc. (NYSE: ARNC). Arconic creates breakthrough products that shape industries. Working in close partnership with our customers, we solve complex engineering challenges to transform the way we fly, drive, build and power. Through the ingenuity of our people and cutting-edge advanced manufacturing techniques, we deliver these products at a quality and efficiency that ensure customer success and shareholder value.

Valley-Todeco is generally supportive of the SCAQMD's effort to develop an amended regulation to provide additional control of hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations to ensure that ambient air concentrations of hexavalent chromium remain protective of human health and the environment. We appreciate SCAQMD's continued interest in developing sound regulations that protect public health and the environment while minimizing unnecessary regulatory burdens on industry and offer the following comments to the SCAQMD for its consideration into the final amended Rule 1469.

1.0 Include a definition for buffing, grinding and polishing operations

PAR 1469 contains several requirements for buffing, grinding and polishing operations, including housekeeping requirements and best management practices. Valley-Todeco is concerned that, without a definition, the current interpretation of buffing, grinding and polishing activities and operations could be overly broad. For example, references to "clean, using an approved cleaning method, floors within 20 feet of a buffing, grinding, or polishing workstation" and "conduct all buffing, grinding, and polishing operations within a building enclosure" (emphasis added) could be interpreted that activities unrelated to chromium electroplating and chromic acid anodizing would be subject to these requirements, e.g. a maintenance area grinder for grinding a piece of angle iron or the grinding on a weld that has just been completed. These examples are clearly not within the stated purpose of the rule. 10-1

Therefore, Valley-Todeco recommends that PAR 1469 be revised by adding a definition for buffing, grinding, and polishing operations to read as follows:

> BUFFING, GRINDING, OR POLISHING means the buffing, grinding or polishing of parts that have gone through a process that includes one or more Tier I or Tier II Hexavalent Chromium-Containing Tanks.

2.0 Include a definition for associated process tank

PAR 1469 makes numerous references to 'associated process tank' but this term has not been defined. Associated process tanks are considered within the definition of a Tank Process Area, must be operated within a building enclosure under section (e), and are included in the BMP requirements of section (g). The Preliminary Draft Staff Report identifies several types of non-electroplating and non-anodizing tanks that can contain elevated levels of hexavalent chromium that could become a source of significant emissions[1]. Such tanks have been addressed in PAR 1469 through the 1000 ppm hexavalent chromium concentration threshold for Tier I and Tier II tanks and Valley-Todeco supports this. However, there are other tanks identified in the Preliminary Staff Report (Tables 1-1 through 1-4) that are associated with the overall process but which contain no or very low concentrations of hexavalent chromium and could not be a significant source of hexavalent chromium emissions. Some associated process tanks may even be located away from the main area of tank operations. Placing the same requirements on these tanks as Tier I Hexavalent Chromium-Containing Tanks would be an undue burden for little or no environmental benefit. 10-2

Valley-Todeco believes that PAR 1469 needs to include a definition of the term 'associated process tank' to exclude those tanks that are not located near a Tier I or Tier II Hexavalent Chromium Containing Tanks where there would be a higher potential for cross contamination, i.e. not located within a tank process area.

Therefore, Valley-Todeco recommends that PAR 1469 be revised by adding a definition for associated process tank to read as follows:

[1] Preliminary Draft Staff Report, Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations, November 2017, p. 1-11.

ASSOCIATED PROCESS TANK means a tank that is located within a Tank Process Area but which is not a Tier I or Tier II Hexavalent Chromium-Containing Tank. 10-2 (cont'd)

3.0 Clarify the operation of devices in building enclosure openings that exhaust to the outdoor air

Section (e)(5) of PAR 1469 prohibits the operation of any device in a building enclosure opening in the roof that pulls air from the building enclosure and exhausts to the outside air unless the air is vented to a HEPA filter equipped air pollution control device. Valley-Todeco believes that the requirement needs to be clarified to specifically exclude air conditioning systems that pull air from the building enclosure and return air back to the building enclosure. 10-3

Therefore, Valley-Todeco recommends that section (e)(5) of PAR 1469 be revised to read as follows:

(5) Prohibit operation of any device in any building enclosure opening in the roof that pulls air from the building enclosure to the outdoor air unless the air is vented to an add-on air pollution control device that is fitted with HEPA filters. Roof-mounted air conditioning systems that return air back to the building enclosure are excluded from this requirement

4.0 Clarify the areas subject to daily cleaning

Section (f)(4) of PAR 1469 requires daily cleaning for surfaces within an enclosed storage area, open floor area, walkways around Tier I and Tier II Hexavalent Chromium-Containing Tanks, as well as any other surfaces that may become potentially contaminated. While 'enclosed storage area' is defined and 'walkways around the Tier I and Tier II Hexavalent Chromium-Containing Tanks' can be readily interpreted, the term 'open floor area' is not defined in PAR 1469 or described in the Preliminary Draft Staff Report, and can be interpreted differently by different people. To avoid potential compliance issues as to what constitutes 'open floor area', Valley-Todeco believes that this term needs to be clarified within the description of the housekeeping requirements of section (f)(4). 10-4

Therefore, Valley-Todeco recommends that section (f)(4) of PAR 1469 be revised to read as follows:

(4) Clean, using an approved cleaning method, surfaces within the enclosed storage area, open floor area within the tank process area, walkways around the Tier I or Tier II Hexavalent Chromium-Containing Tank(s), or any surface potentially contaminated with hexavalent chromium or surfaces that potentially accumulate dust at least daily;

5.0 Clarify that the edition of ACGIH's Industrial Ventilation manual that must be adhered to is the edition that is the most current edition at the time that a permit application for air pollution control equipment is deemed complete by SCAQMD 10-5

Section (h)(5) of PAR 1469 requires that air pollution control techniques are operated at the minimum hood induced capture velocity specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the ACGIH. Valley-Todeco is concerned that the requirement as currently written could result in the minimum capture velocity becoming a moving target where a facility would have to purchase (not free!) a copy of each new edition of *Industrial Ventilation, A Manual of Recommended Practice for Design* to determine if the minimum capture velocity requirement has changed. Furthermore, as written the PAR would appear to require facilities to upgrade the ventilation system and controls if there is a change to the capture velocity requirements specified in the Manual, and it is unclear how quickly these upgrades would be required. Valley-Todeco believes that the minimum capture velocity requirement should be based on the edition of *Industrial Ventilation, A Manual of Recommended Practice for Design* which is in effect at the time that a permit application for air pollution control equipment is deemed complete by the SCAQMD. This approach is consistent with other SCAQMD regulations, such as the recently adopted Rule 1430. 10-5 (cont'd)

Therefore, Valley-Todeco recommends that section (h)(5) of PAR 1469 be revised to read as follows:

(5) Ventilation Design and Operation for Air Pollution Control Techniques
The owner or operator of a facility that conducts chromium electroplating or chromic acid anodizing operations shall operate air pollution control techniques required under subdivision (h) and (t) at the applicable minimum hood induced capture velocity specified in the most current edition of the Industrial Ventilation, A Manual of Recommended Practice for Design, published by the American Conference of Governmental Industrial Hygienists~~.~~, at the time a permit application is deemed complete with the SCAQMD.

6.0 Delete the requirement for ensuring that air velocity within 10 feet of a controlled Tier II Hexavalent Chromium Containing Tank is less than one-tenth of the collection slot velocity of the more recent successful source test.

Section (m)(1)(D) requires that "any air velocity within 10 feet of a Tier II Hexavalent Chromium-Containing Tank vented to an add-on pollution control device is less than one-tenth of the collection slot velocity as specified in the most recent successful source test." However, the SQMD has provided no specifics on how this monitoring is to be accomplished, i.e. at what frequency, at how many locations, etc. in either PAR 1469 or in the Preliminary Draft Staff Report[2]. Valley-Todeco is concerned that lack of specific instructions on how to determine compliance with this requirement will result in different interpretations by facilities and SCAQMD inspectors and result in unnecessary compliance issues. PAR 1469 contains requirements for a building enclosure and prevention of cross currents under section (e), for qualitative and quantitative assessment of capture efficiency under section (k)(6), and for static and velocity pressure monitoring under section (m)(1)(C). Collectively, these requirements should provide sufficient assurance for the proper capture of emissions at a Tier II 10-6

[2] Preliminary Draft Staff Report, Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations, November 2017

Hexavalent Chromium-Containing Tank and make the poorly defined requirement of section (m)(1)(D) superfluous. Therefore, Valley-Todeco recommends that section (m)(1)(D) be removed from PAR 1469. 10-6 (cont'd)

7.0 Clarify the surface tension measurement frequency for existing facilities already subject to this requirement

Current Rule 1469, at section (g)(2), requires "…Surface tension shall be measured daily for 20 operating days, and weekly thereafter as long as there is no violation of the surface tension requirement. If a violation occurs, the measurement frequency shall return to weekly for 20 operating days, and weekly thereafter." Section (m)(2)(A) of PAR 1469 retains the daily monitoring requirement for 20 operating days, but changes the weekly monitoring requirement to "every third operating day thereafter, but not less than once per week." 10-7

Valley-Todeco seeks clarification from the SCAQMD that sources currently subject to Rule 1469, and which have previously completed daily surface tension measuring for 20 days, will only be required to change the measurement frequency from weekly to every third operating day but not less than once per week under PAR 1469. And, that there is not an expectation to redo the daily measuring for 20 days just because of the measurement frequency change from weekly to every third operating day proposed in PAR149.

Conclusion

Valley-Todeco appreciates the opportunity to comment on PAR 1469. We are hopeful that our comments will help SCAQMD to further improve PAR 1469 and create a final amended rule that incorporates flexible and cost-effective compliance provisions for all affected facilities. 10-8

Should you require clarification or further discussion of our comments, please contact Dean Richardson (Valley-Todeco's Environmental Engineer) at dean.richardson@arconic.com or (818) 364-6062.

Sincerely,

Kristin March
Director of Operations
Valley Todeco, Inc.
Arconic Fastening Systems and Rings
Kristin.March@arconic.com

Responses to Valley-Todeco, Inc. Comment Letter, submitted 12/11/17

10-1 Response: The definition suggested in the comment does not capture all buffing, grinding and polishing operations of concern. In particular, it does not include products containing hexavalent chromium that are buffed, ground, or polished that do not go through a Tier I, Tier II or Tier III Tank.

10-2 Response: A definition for 'Associated Process Tank' has been added to the proposal as follows: *Associated Process Tank means any tank in the process line of a Tier I, Tier II, or a Tier III Hexavalent Chromium Tank.*

10-3 Response: The requirement under paragraph (e)(4) has been modified to require closure of all enclosure openings in the roof that are located within 15 feet from the edge of any Tier II or Tier III Tank. Please see Response to Comment 6-13. It is not the intent of this paragraph to include roof mounted air conditioners that return cooled air back into a building.

10-4 Response: Please see Response to Comment 1-9. Regarding the comment on "open floor area", this language exists in the current version of Rule 1469. No clarifications to this language are proposed.

10-5 Response: The language for paragraph (h)(6) has been modified to read: "*The owner or operator of a facility shall operate air pollution control techniques required under subdivisions (h) at or above the applicable minimum hood induced capture velocity specified in the most current edition (i.e., at the time the SCAQMD permit application was deemed complete by SCAQMD) of Industrial Ventilation, A Manual of Recommended Practice for Design, published by the American Conference of Governmental Industrial Hygienists".*

10-6 Response: The referenced subparagraph has been removed from PAR 1469.

10-7 Response: Please see Response to Comment 2-15.

10-8 Response: Thank you for your comment. The SCAQMD staff has worked with stakeholders throughout the rulemaking process to develop a proposal that is health protective and with consideration of cost impacts.

RADTECH
THE ASSOCIATION FOR UV&EB TECHNOLOGY

December 15, 2017

Mr. Eugene Kang
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Re: Public comments to Proposed Amended Rule 1469— Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing

Dear Eugene:

RadTech International hereby reiterates the comments we have made public workshop on proposed amended rule (PAR) 1469. RadTech is the association for the advancement of Ultraviolet/Electron Beam/Light Emitting Diodes (UV/EB/LED) technology. We represent over 800 members nationwide and have sister chapters worldwide. Our processes are environmentally friendly and generate essentially zero VOC emissions. Our technology has been recognized by the district and board members have been very supportive of our industry.

Some of our member companies have products that do not contain chrome. Thus, we would urge the district to provide incentives to companies who choose to reformulate their process and eliminate emissions of Hexavalent Chrome. The current overly prescriptive monthly reporting requirements for facilities who choose to phase-out chrome from their operations will be an impediment to the district's stated goal of reducing emissions of Hexavalent Chrome. As mentioned during the workshop, facilities who choose to eliminate toxics should be encouraged and supported to do so. Adding yet another regulatory process as a condition for conversion, is not helpful to businesses or to the district. We suggest that the frequency of the reporting be changed from twelve times per year to twice per year. Staff's concern with ensuring facilities are making progress with the conversion process, is addressed by the requirement for facilities to the file a Compliance Plan to the district. The Plan would already have timelines in place and any undue delay would be covered under the Compliance Plan. 11-1

Additionally, much testimony was heard from small and medium sized businesses, regarding the financial hardships they face in meeting the requirements of PAR 1469. We urge the district to partner with our industry and the regulated community and provide financial support for conversion to chrome-free projects. The district has typically focused on funding mobile source projects and stationary sources have not seen their fair share of assistance. We are hopeful that our industry can participate in recent funding opportunities being considered by the district. Toxic emission reductions are a key component of Assembly Bill 617 (Garcia) and any financial support the district can provide will not only benefit the business community but also the environment and help the district meet its mandates. 11-2

We appreciate your attention to these issues and look forward to a productive rulemaking effort.

Sincerely

Rita M. Loof
Director, Environmental Affairs

Cc: Wayne Nastri, SCAQMD Board

Responses to RadTech International Comment Letter from (12/15/17)

11-1 Response: PAR 1469 has been modified to require a default quarterly frequency for progress reports relating to Hexavalent Chromium Phase-Out Plans, and also provides flexibility for approval of different reporting frequencies as determined by the Executive Officer.

11-2 Response: Please see Response to Comment 9-2. If the non-PFOS chemical fume suppressants are not certified, SCAQMD staff will seek funding to help affected facilities with the costs of installation of add-on pollution control systems.

Staff has added a provision that the Executive Officer in consultation with CARB may approve an alternative to a wetting agent chemical fume suppressant that is as equally effective as a certified wetting agent chemical fume suppressant pursuant to paragraph (l)(2) of PAR 1469. This approach will allow facilities to use an alternative to a wetting agent chemical fume suppressant if emissions testing conducted by SCAQMD demonstrates that the alternative is as equally effective as a certified wetting agent chemical fume suppressant. Additionally, the owner or operator of a facility that opts to use an alternative to a wetting agent chemical fume suppressant will be required to comply with permit conditions that are specified during the certification process.

The alternative to a wetting agent chemical fume suppressant would be available to only the smallest plating facilities that are currently allowed to use chemical fume suppressants. This approach will provide a cost savings, given that SCAQMD staff will conduct the necessary emissions testing. Also, similar to the use of certified wetting agent chemical fume suppressants, no further emissions testing would be required, provided the operator complies with the conditions of the certification of the alternative.

From: Alan Olick [mailto:alanolick@aol.com]
Sent: Friday, December 15, 2017 11:04 PM
To: Neil Fujiwara <nfujiwara@aqmd.gov>; ekang@aqmd.gov.
Subject: Re: Update: Delay for PAR 1469

Hi Neil and Eugene;

Please try to read my letters to the AQMD concerning my recent NOV's.
I feel we are being treated unfairly and I was just required to pay additional monies
for a new source test and hiring a new testing company to repeat the same test
to certify our chrome tank which now one instead of two.
The place my company is in seems to have no cure as it appears that even the
new approved fume suppressant might not be allowed. 12-1
We have spent about $80,000.00 on testing our two chrome plating tanks and
many man hours of set up and clean up.
Please can you help us to cancel the recent NOV's?
I will have to close our chrome plating and my customers will send their plating
to Mexico.
I will do whatever it takes to keep on the good side of the AQMD.

Thank You
Alan Olick
MFASC board member for 30 years.
President of Brite Plating and General Plating
1313 Mirasol St
Los Angeles, Ca. 90023

Alan Olick
alanolick@aol.com

Responses to from Brite Plating and General Plating Comment Letter, submitted 12/15/17

12-1 Response: PAR 1469 proposes to revisit the certification of the currently certified wetting agent chemical fume suppressants. Under the current proposal, beginning July 1, 2021, facilities may only add a wetting agent chemical fume suppressant to a Tier III Tank that is certified based on a revised process conducted by SCAQMD and CARB. The date was chosen to allow sufficient time for facilities to implement alternatives, manufacturers to potentially reformulate chemical fume suppressants, and SCAQMD staff to certify the chemical fume suppressants. The request to cancel the referenced Notices of Violations (NOVs) in the comment has been forwarded to SCAQMD's enforcement and legal staff. SCAQMD rules staff does not have the ability to cancel NOVs.

-------- Original message --------
From: Robina <robinasuwol@earthlink.net>
Date: 12/7/17 2:22 PM (GMT-08:00)
To: Eugene Kang <EKang@aqmd.gov>, Susan Nakamura <SNakamura@aqmd.gov>
Subject: Please share comment- "Listen Only" Call-in

Dear Susan & Eugene,

Extremely disappointing to note that the "call-in" is listen only, especially in of the fires which makes traveling challenging. 13-1

Below, is the link to the Madrid Statement that I hope can be distributed to all of the 1469 Workshop participants. 13-2

I hope that you can share our deep concerns with those today that we are extremely concerned about the Fume Supressants because of their high persistence, bioaccumulation potential and extreme toxicity.The communities we work with cannot allow these toxic emissions to continue, especially when engineered controls are available. 13-3

We are committed to working with AQMD and industry to locate funding sources to assist in transitioning to engineered controls. Sources we are investigating include, but are not limited to the California Pollution Control Financing Authority. 13-4

It is unfortunate that we cannot voice these concerns on this call, and would have attended in person today, were it not for the fires.

Please kindly share these comments with all participating in person, on the call, or other 1469 Workshop participants who also may have been impacted by the fires and unable to attend today. 13-5

Respectfully,

Robina Suwol
Founder & Executive Director
California Safe Schools
818.785.5515 office
www.calisafe.org

The information contained in this communication is confidential material and is intended for the designated recipient only. If you are not the designated recipient, you are hereby notified that any unauthorized review,dissemination, distribution or copying of this communication, and that which is transmitted herewith, is strictly prohibited. If this communication is received by you in error, please telephone (818) 785-5515 immediately. Please note that internet communications cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost,destroyed, arrive late or incomplete, or contain viruses. We do not accept responsibility for any errors or omissions that are present

-----Original Message-----
From: Robina [mailto:robinasuwol@earthlink.net]
Sent: Thursday, December 7, 2017 2:49 PM
To: Eugene Kang <EKang@aqmd.gov>; Susan Nakamura <SNakamura@aqmd.gov>
Cc: dcapjane@aol.com; delamoactioncommittee@gmail.com; shabakaheru@yahoo.com; aguirrefel@gmail.com
Subject: Additional Concerns include: 100 ft. from sensitive receptors

Susan and Eugene,

I would also like to be on record for expressing serious concerns surrounding the recommendation of 100 feet from sensitive receptors. We are unclear what process and protocols were used to determine 100 feet, when most sensitive receptors are more in the 200- 300 foot range. 13-6

Protecting our most vulnerable is our highest priority, and the 100 feet proposal does would not provide sufficient protection.

Thank you very much for your consideration, and please kindly share this comment with the entire 1469 Workshop attendees today, and others who may not be able to attend. Thank you.
so much.

Respectfully,

Robina Suwol
Founder & Executive Director
California Safe Schools
818.785.5515 office
818.261.7965 cell
www.calisafe.org

Responses to Robina Suwol Comment Email, submitted 12/7/17

13-1 Response: Throughout the rule development process, the SCAQMD staff has held 13 Working Group Meetings. All Working Group Meetings that were held at SCAQMD's headquarters in Diamond Bar had a call-in number where people could conference into the meeting and dialogue with staff. Unlike Working Group meetings, Public Workshops only have a "listen only" ability when held in the auditorium. This was also indicated on the Notice of Public Workshop.

13-2 Response: Staff did not receive a link to the Madrid Statement as indicated in the comment. It is not SCAQMD's policy to distribute non-SCAQMD materials to attendees at the Public Workshop.

13-3 Response: The Public Workshop Presentation included information from OEHHA's memos regarding the toxicity of the non-PFOS chemical fume suppressants. See also Response to Comment 9-4.

13-4 Response: If no non-PFOS chemical fume suppressants is certified, SCAQMD staff will seek funding to help the affected facilities with the costs of installation of add-on pollution control systems.

Staff has added a provision that the Executive Officer in consultation with CARB may approve an alternative to a wetting agent chemical fume suppressant that is as equally effective as a certified wetting agent chemical fume suppressant pursuant to paragraph (l)(2) of PAR 1469. This approach will allow facilities to use an alternative to a wetting agent chemical fume suppressant if emissions testing conducted by SCAQMD demonstrates that the alternative is as equally effective as a certified wetting agent chemical fume suppressant. Additionally, the owner or operator of a facility that opts to use an alternative to a wetting agent chemical fume suppressant will be required to comply with permit conditions that are specified during the approval process.

The alternative to a wetting agent chemical fume suppressant would be available to only the smallest plating facilities that are currently allowed to use chemical fume suppressants. This approach will provide a cost savings, given that SCAQMD staff will conduct the necessary emissions testing. Also, similar to the use of certified wetting agent chemical fume suppressants, no further emissions testing would be required, provided the operator complies with the conditions of the certification of the alternative.

13-5 Response: Refer to Response 13-1. The comments received via email are included in the Staff Report and responded to. The comment is part of the public record and is available to the public as a result.

13-6 Response: A sensitive receptor means any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing. The requirement to prohibiting enclosure openings within 1,000 feet of the nearest sensitive receptor is meant to reduce the exposure to sensitive receptors while being cost conscious. In addition to prohibiting enclosure openings within 1,000 feet of the nearest sensitive receptor, PAR 1469 includes a requirement to install a permanent total enclosure under certain conditions for facilities located within 1,000 feet of a sensitive receptor.

MFASC
METAL FINISHING ASSOCIATION OF SOUTHERN CALIFORNIA, INC.

February 2, 2018

Mr. Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91765

Re: Comments from Metal Finishers Association - Proposed Amended Rule 1469 and Preliminary Draft Staff Report, Working Group Meeting #9

Dear Mr. Nastri:

The Metal Finishers Association ("MFA") represents over 130 companies throughout Northern and Southern California, which comprise a diverse industrial base of metal finishing and related businesses that employ thousands of workers. Its members provide necessary products and services to manufacturers in various other industries, including, automotive, consumer products, industrial, energy, aerospace and numerous others. In particular, a large segment of our membership provide mission critical parts and components for military aircraft, satellites, telecommunications, defense and the like. In addition, well over 90% of the MFA membership meet the federal definition of Small Business with fewer than 150 employees, and these are typically private family businesses or otherwise small closely held companies.

Representatives of the MFA, including legal counsel and technical experts, have been actively engaged with AQMD staff since the beginning of this rulemaking process. MFA members and its representatives have also attended all nine (9) public working group meetings, including, the most recent meeting held on January 4, 2018 (referred to as "Working Group Meeting #9"), plus participated in numerous other meetings with the AQMD's legal counsel, economic experts and rule development staff. In addition, the MFA and its representatives attended and testified at Public Hearings on this rule development which were held on November 1, 2017 and December 7, 2017. This comment letter addresses information presented in PAR 1469 rule language and Preliminary Draft Staff Report dated January 19, 2018 ("Staff Report"), and public meetings held to date. The MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, draft rules and other information.

1.0 RECENT DEVELOPMENTS AND IMPORTANT ISSUES

(1) <u>PFOS Alternatives</u> – Over the past decade, the MFA has been active on the research and rulemaking of PFOS alternatives at the federal and state level, and is very concerned about any suggested "phase out" of such alternatives for PAR 1469. As the SCAQMD is aware, many metal finishers depend upon the use of certified non-PFOS suppressants for regulatory compliance, which are currently allowed under the existing Rule 1469. Moreover, many of the smallest metal finishers depend solely upon such non-PFOS suppressants for compliance in lieu of add-on controls. Based on recent developments, the Staff Report indicates the SCAQMD and CARB is currently researching potential toxicity concerns with 14-1

P.O. Box 6547, Burbank, CA 91510-6547 (818) 238-9590 www.mfaca.org

Wayne Nastri, SCAQMD - Proposed Amended Rule 1469
January 31, 2018

such non-PFOS suppressants, such as, fluorotelomer alcohol (FTOH), fluorotelomer sulfoinate (FTSA), perfluorohexanoic acid (PFHxA), perfluorohexane sulfonate (PFHx) and others. Based on these reviews, the Staff Report indicates the SCAQMD has determined the toxicity for these chemicals are largely inconclusive, including any potential carcinogenic effects. Further, with the exception of FTOH, OEHHA did not develop interim Reference Exposure Levels (iRELs) for these PFOS alternatives. In the case of FTOH, there are no proposed cancer potency factors, and its iREL for chronic impacts is several times higher than hexavalent chromium. As a consequence, the MFA does not believe the suggested "phase out" of such PFOS alternatives are warranted until such time there is convincing scientific evidence these chemicals pose an equal or greater risk to public health than the compound which it is controlling, hexavalent chromium. In our view, the benefits of reducing hexavalent chromium emissions far outweigh the inconclusive findings of potential toxicity risks from these PFOS alternatives. 14-1 (cont'd)

(2) Tier I Hexavalent Chromium Tanks – PAR 1469 (c)(58) proposes a threshold of 1,000 ppm of hexavalent chromium content to qualify Tier I tanks. As we have noted, there remains insufficient scientific support and test data that justifies such a low concentration threshold for Tier I tanks. Tier I should only apply to those tanks which exhibit the highest potential for hexavalent chrome emissions, and therefore exclude all other tanks from regulatory applicability. At this time, the Staff Report does not present sufficient test data to justify such a low concentration limit for Tier I tank applicability. 14-2

(3) Tier II Hexavalent Chromium Tanks – PAR 1469 (c)(59) proposes several categories of Tier II tank applicability based on minimum operating temperature and hexavalent chromium concentration. The SCAQMD presentation from Working Group #9 indicates a tank with as little as 100 ppm of hexavalent chromium would be a significant emission source. Further, the Staff Report concludes a tank that operates as low as 140°F with greater than 1,500 ppm would yield similar or greater amount of emissions. To support its conclusions, the Staff Report provide test data on Table 1-5 (shown below).

Table 1-5: SCAQMD Sampling of Various Temperatures

Tank Type	Tank Hexavalent Chromium Content (ppm)	Tank Operating Temperature (°F)	Run	Tank Hexavalent Chromium Emission Concentration (ug/m³)	Tank Hexavalent Chromium Emission Rate (mg/hr)	Tank Hexavalent Chromium Emission Rate per Ft² (mg/hr-ft²)
Alodine Tank	347	150	1	37.9	0.037	3.75E-3
			2	25.7	0.025	2.53E-3
			3	58.8	0.054	5.40E-3
			AVG	40.8	0.039	3.89E-4
Alodine Tank	333	160	1	72.7	0.083	8.33E-3
			2	51.3	0.058	5.80E-3
			3	134.9	0.156	1.56E-2
			AVG	86.3	0.099	9.92E-3

14-3

As shown in Table 1-5, the Staff Report provides only six (6) data points from a single tank at two (2) operating temperatures (150° F and 160° F) and hexavalent chromium concentrations of 347 and 333 ppm, respectively. From this very limited sample size, the Staff Report averaged 3 data points per tank, and then concludes, "*At 150°F, 0.20 mg/hr would be exceeded when tank hexavalent chromium concentrations exceed 1,780 ppm. At 160° F, would be exceeded when tank hexavalent chromium concentrations exceed 673 ppm.*" Further, based on this same data set, the SCAQMD presentation from Working Group #9 further indicates a tank with as little as **65 ppm of hexavalent chromium** could be a

Metal Finishers Association of Southern California Page 2 significant source of emissions. The Staff Report appears to make a direct linear correlation of hexavalent chromium concentration and temperature based on this limited sampling data to support its conclusion that Tier II add-on controls are warranted.

The MFA disagrees with the SCAQMD stated conclusions and findings for the proposed Tier II tank categories. First, it is clear the proposed Tier II tank categories are based on very little test data, which are not statistically significant. Second, the Staff Report does not provide any evidence that the proposed Tier II tanks would result in any meaningful or significant emissions outside of a building enclosure. Quite the contrary, as we have noted in prior working group meetings, the AQMD source test staff has indicated measured fugitive emissions through rooftop vents are far below any measurements at the tank surface by several orders of magnitude, even concerning tanks with higher temperatures and concentrations. Third, the above test results are "theoretical" emissions, as the source test results do not take into account various operational effects, such as tank covers, mechanical suppressants, limited operating schedules, tank sizes, etc. Moreover, given that PAR 1469 already proposes severe restrictions on building enclosures, including 3% openings, no cross-draft, limited ventilation and other requirements, such minor emissions (if any) from such proposed Tier II tanks would be sufficiently contained inside a building enclosure, and further add-on controls would not be necessary. 14-3 (cont'd)

Aditionally, even though the SCAQMD proposed some revisions for larger airflows on larger tanks, the standard of .20 mg/hr still appears to be an inappropriate standard because it is essentially a mass load and is not scalable for different sized tanks and operations.

(4) Cost Estimates for APCD – The MFA has been collecting data on the cost of installing HEPA systems over Tier II tanks. Our economist is working closely with SCAQMD staff and will release his findings shortly. The cost per CFM is showing to be around $20. The MFA believes that the early estimates from the SCAQMD January 4, 2018 meeting are unrealistically low. 14-4

(5) Capture Efficiency Testing – PAR 1469 (k)(6) specifies routine slot velocity, pressure of push air manifolds and smoke testing for applicable tanks with add-on control devices every 6-months. In particular, PAR 1469 specifies that a facility must "shut down" all chrome electroplating and anodizing lines, if such tests show a deviation of +/- 10% from the most recently approved AQMD source test or emission screening. The MFA remains concerned of such stringent limitations and shut down requirement, given the numerous factors that could impact these capture test results, such as, equipment sensitivity, testing locations, personnel handling and others. 10% is a very small margin for error which would be difficult to ensure compliance, could result in unnecessary equipment shut downs, and ultimately lead to triggering to costly Permanent Total Enclosure (PTE) requirements pursuant to PAR 1469 (t). 14-5

(6) Ambient Monitoring Near Metal Finishers – The Staff Report continues to present the ambient monitoring data of hexavalent chromium around metal finishers in the cities of Newport Beach, Paramount, Long Beach and Compton. Air toxics enforcement actions against these facilities have referenced a hexavalent chromium concentration of 1 ng/m^3 as a fence line (or near fence line) threshold for enforcement purposes, which we have consistently argued is not supported by the current science. As noted on numerous occasions, the MFA have raised legitimate issues of flawed assumptions, unreliable data, lack of established protocols, use of monitoring equipment not supported by the manufacturer for the purpose for which it has been used, contributing sources, prohibitive costs and inconclusive results relating to this ambient air monitoring data. Based on testimony of affected small businesses during this entire rulemaking, it is clear the AQMD's continued use of such unreliable air monitoring data will have significant adverse economic impacts, including loss of customers, decreased business volumes and 14-6

employee layoffs. To date, the ambient monitoring at many metal finishing facilities are still ongoing for at least 6+ months, and over a year in a few cases. Based on the extensive amount of ambient samples collected, the hexavalent chromium emissions data remains largely inconclusive for any regulatory purposes, and further, would not pass scientific or legal scrutiny in nearly all cases. 14-6 (cont'd)

2.0 PROPOSED KEY AMENDMENTS

(7) Building Enclosures – PAR 1469 (e) specifies numerous building enclosure requirements for both Tier I and Tier II tanks, which the MFA remains concerned on several issues:

a) *Limitation on Building "Openings"* – As per PAR 1469(e)(1), the MFA opposes the 3% surface area limitation on the number of openings in building enclosures, such as doors, windows, roll up doors and others. Over the course of the prior 6+ months of rule development and workshops, a specific surface area or other limitation on building openings has never been presented nor studied by the AQMD staff, and is not supported by any scientific or other evidence in the record. At a minimum, the MFA does not believe the 3% limit for building enclosure should be stricter than EPA Method 204 (Permanent Total Enclosure), which provides for 5% of total surface area. 14-7

b) *Close Roof Openings within 15 feet* – PAR 1469 (e)(4) requires the closure of all roof openings located within 15 feet above the edge of any Tier II Tank. The MFA fails to see the purpose of this requirement since Tier II tanks are required to have air pollution controls and meet allowable emission limits. As a consequence, the MFA requests that this provision be removed. 14-8

c) *Prohibition on Rooftop Ventilation* – PAR 1469 (e)(5) prohibits any device in any roof opening that pulls air from building enclosures for Tier I and Tier II tanks. The MFA is concerned that such a broad prohibition on building ventilation/exhaust will create uncomfortable, and likely unsafe, working conditions for employees within such enclosures. Moreover, as we have noted in prior working group meetings, the AQMD source test staff has indicated measured fugitive emissions through rooftop vents are far below any measurements at the tank surface by several orders of magnitude. Consequently, such a broad prohibition on rooftop ventilation for building enclosures is not warranted. 14-9

d) *Breaks, cracks, gaps and deterioration* – PAR 1469 (e)(6) and (7) specifies monthly inspections, and a 72 hour repair of "breaks, cracks, gaps and deterioration" of building enclosures. There is no clear definition of "breaks, cracks, gaps and deterioration" in the rule, and unlikely that a clear definition is possible. As a consequence, the MFA opposes these inspection and repair requirements, given the vagueness of "breaks, cracks, gaps and deterioration", and a high risk of wide interpretation by AQMD enforcement officers for issuance of NOVs. 14-10

(8) Permanent Total Enclosures (PTEs) – PAR 1469 (t) specifies a trigger for PTEs for Tier II tanks based on (a) failure of a source test within a 48 month period; or (b) more than one incident of failure of smoke and/or slot velocity measurements within 48 month period. If triggered, PAR 1469 requires permit applications for a PTE within 180 days, and construction of the PTE within 12 months. In general, the MFA does not believe that PTEs are necessary to control potential Tier II tanks, as we anticipate the use of buildings, housekeeping and BMPs would be sufficient control measures. As we 14-11

have noted, the use of PTEs can also be very costly and difficult to implement, especially for facilities that were not originally designed nor constructed to accommodate PTEs for existing tank operations. Due to a small margin of failure and issues noted above for the proposed testing, it is too easy for a PTE to be triggered under the proposed rule. Moreover, the proposed requirement to shut down a Tier II tank for failing the quantitative tests is sufficient to maintain compliance, and such PTE requirements are unnecessary. For all these reasons, the MFA requests that a PTE on-ramp requirement be removed from the proposed rule. 14-11 (cont'd)

(9) Freeboard Height – PAR 1469 (d)(4) would require a minimum freeboard height based on the ACGIH Industrial Ventilation Manual for newly installed (or modified) Tier II tanks after the rule adoption date. As noted previously, the MFA opposes a freeboard height requirement for new or modified applicable tanks, as it has not been demonstrated that a minimum freeboard height results in any meaningful emission reductions. Moreover, to manage a different freeboard height for different tanks would create significant compliance issues for facility operators while providing minimal environmental benefit. 14-12

(10) Source Testing – PAR 1469 (k)(3) requires initial compliance source test for all facilities within 120 days from rule adoption, and then every 36 months thereafter. The MFA requests that subsequent source tests/screenings be conducted every 5 years after the initial test, not every 3 years. 14-13

(11) Notification of Incidents – PAR 1469 (p)(4)(A) requires a regulated facility to notify the AQMD within "one hour" of any failed smoke test, failed source test, exceedance of a permitted ampere-hour limit or malfunction of a non-resettable ampere-hour meter. Further, PAR 1469 (p)(4)(B) requires corrective action and a written report within seven (7) days of notification. The MFA believes these proposed notification requirements are redundant, as existing AQMD Rule 430 already covers the reporting of such incidents that result in rule or permit violations. 14-14

(12) Surface Tension Testing – PAR 1469 (o)(4)(D) proposes a "daily" surface tension test for 20 consecutive days, and then every 3rd day thereafter, provided there is no violation of surface tension requirements. As noted previously, the MFA opposes such rigorous testing frequency since the current requirement of weekly surface tension testing is sufficient to ensure compliance. Moreover, there is insufficient data which warrants a more frequent testing requirement. 14-15

(13) Housekeeping – The MFA opposes daily cleaning of applicable tanks and operational areas, as currently proposed in PAR 1469 (f)(4), as this places an undue burden on metal finishers. The current cleaning requirement is once per week, which we believe is sufficient housekeeping for applicable operations. 14-16

(14) Water Spraying – Regarding the proposed limitations on using water sprays as currently proposed in PAR 1469 (g)(2), the MFA does not believe such limitations are necessary. Given the water spray typically occurs over rinse tanks, and that neither the parts nor rinse tank will have significant amounts of chrome laden liquid. 14-17

(15) Compressed Air Cleaning or Drying – Regarding the proposed limitations on using compressed air cleaning or drying within 15 feet of a Tier I or Tier II tank as currently proposed in PAR 1469 (g)(7), the MFA does not believe such limitations are necessary. At this point in the process, any residual rinse water on finished parts will have negligible amounts of hexavalent chrome, if any. 14-18

The MFA and its representatives look forward to continued discussions on the amended rule with the AQMD. Thank you and we look forward to your response.

Sincerely,

Wesley Turnbow
President

cc: Susan Nakamura, SCAQMD (via email only)
Kurt Wiese, SCAQMD (via email only)
Barry Groveman, Musick Peeler
Ryan Hiete, Musick Peeler

Responses to Metal Finishing Association of Southern California (MFASC) Comment Letter, submitted 2/2/18

14-1 Response: PAR 1469 proposes to revisit the certification of the currently certified wetting agent chemical fume suppressants. Under the current proposal, beginning July 1, 2021, facilities may only add a chemical fume suppressant to a Tier III Tank that is certified based on a revised process conducted by SCAQMD and CARB. The date was chosen to allow sufficient time for facilities to implement alternatives, manufacturers to potentially reformulate chemical fume suppressants, and SCAQMD staff to certify the chemical fume suppressant. Please see also Response to Comment 9-4.

Until the new certification process is completed, it is premature to consider the process a "phase-out" of the currently certified non-PFOS chemical fume suppressants. That is one of several possible outcomes of the re-certification process. Staff will work with CARB and the Office of Environmental Health Hazard Assessment (OEHHA), as well as other regulatory, agency, industry and public stakeholders as appropriate.

Staff has added a provision that the Executive Officer in consultation with CARB may approve an alternative to a wetting agent chemical fume suppressant that is as equally effective as a certified wetting agent chemical fume suppressant pursuant to paragraph (l)(2) of PAR 1469. This approach will allow facilities to use an alternative to a wetting agent chemical fume suppressant if emissions testing conducted by SCAQMD demonstrates that the alternative is as equally effective as a certified wetting agent chemical fume suppressant. Additionally, the owner or operator of a facility that opts to use an alternative to a wetting agent chemical fume suppressant will be required to comply with permit conditions that are specified during the approval process.

The alternative to a wetting agent chemical fume suppressant would be available to plating facilities that are currently allowed to use chemical fume suppressants. This approach will provide a cost savings, given that SCAQMD staff will conduct the necessary emissions testing. Also, similar to the use of certified wetting agent chemical fume suppressants, no further emissions testing would be required, provided the operator complies with the conditions of the approval of the alternative.

14-2 Response: Tier I Tanks are tanks that have a hexavalent chromium concentration of 1,000 parts per million (ppm) or greater and are not considered Tier II or Tier III Tanks. Source testing of numerous process tanks has demonstrated hexavalent chromium concentrations of less than 1,000 ppm may result in emissions greater than 0.2 mg/hr, for tanks that are air sparged, rectified, or heated. Therefore, the potential exists for emissions of concern exist from tanks with hexavalent chromium concentrations greater than 1,000 ppm.

However, there are limited rule requirements imposed on Tier I Tanks, as summarized below:

1. Operate Tier I Tanks indoors (not required to be located in a building enclosure);
2. Clean surfaces around Tier I Tanks weekly; and
3. Minimize dragout around Tier I Tanks by installing drip trays.

14-3 Response: PAR 1469 includes an intermediate Tier II Tank classification that corresponds to tanks operated at temperatures between 140 and 170 degrees Fahrenheit. Tier II Tanks will be allowed to use in-tank controls, such as tank covers and mechanical fume suppressants rather than being required to vent the tank to APC systems. Regarding the comments on limited test data and linear correlation between temperature and hexavalent chromium concentration in previous versions of PAR 1469, please see Response to Comment 1-1.

14-4 Response: Cost estimates for PAR 1469 include costs for APC systems that range from \$17/cfm to \$23/cfm. Staff obtained capital cost estimates for installation of APC systems from several sources for this analysis. Staff has worked with the MFASC's consultant from Environomics to validate the approach for establishing accurate cost estimates.

14-5 Response: Please see Response to Comment 2-12.

14-6 Response: Please see Responses to Comments 1-7 and 2-3. The use of the 1 ng/m^3 threshold in the Orders for Abatement were supported during the Hearing Board deliberations. PAR 1469 does not include an ambient concentration limit or threshold similar to that in the Orders for Abatement.

14-7 Response: PAR requires Tier II and Tier III Tanks to be operated within a building enclosure. A building enclosure is not the same as a PTE as defined under EPA Method 204. In particular, a building enclosure is not required to be kept under negative pressure and maintain inward face velocity of at least 200 feet per minute (fpm) through all natural draft openings, as is required for a PTE.

Please also see Responses to Comments 1-2 and 6-11.

14-8 Response: Since the comment was received, the Tier II Hexavalent Chromium Tanks have been reclassified into Tier II and Tier III Tanks. The intent of the requirement to close openings within 15 feet of a Tier III Tank, whether natural draft openings or forced air openings, is to ensure that any fugitive emissions that escape the primary control at the tank surface are not emitted as fugitive emissions through a roof vent. Staff has observed Tier III Tanks located in close proximity to tanks that are operated at or near the boiling temperature of water, where there may be a transport mechanism (i.e. steam that creates an updraft) to cause fugitive emissions from a building enclosure through an opening located directly above or very near the tank.

As an alternative to permanently closing openings located within 15 feet of a Tier II or Tier III Tank, facility owner/operators have the option of venting those openings through HEPA controls.

14-9 Response: The current proposal for PAR 1469 allows forced-air openings, provided they are at least 15 feet from the edge of a Tier III Tank. Please see Responses to Comments 6-13 and 6-14.

14-10 Response: Paragraphs (e)(5) and (e)(6) have been modified to add clarity. The proposal includes a definition for building enclosure under paragraph (c)(11). PAR 1469 removes references to breaks, cracks, gaps, and deterioration in the definition of Building Enclosure. Inspection of building enclosure focuses on a breach or large break in the enclosure and removes the references to breaks, cracks, gaps, and deterioration.

14-11 Response: PAR 1469 requires PTEs for facilities that have consistently shown they cannot meet the point source emission requirement or fail to adhere to requirements to shut down a tank that fails specific parameter monitoring provisions. Please also see Response to Comment 1-11.

14-12 Response: The requirements for freeboard height have been removed from PAR 1469.

14-13 Response: Please see Response to Comment 2-11.

14-14 Response: Please see Response to Comment 2-13.

14-15 Response: The currently certified non-PFOS fume suppressants have been demonstrated to degrade at a faster rate than previously certified PFOS fume suppressants. The proposed requirement to test surface tension every third operating day was previously discussed with the stakeholders. Please also see Response to Comment 2-15.

14-16 Response: Please see Response to Comment 1-9.

14-17 Response: The proposal under paragraph (g)(2) allows for the installation of splash guards as a means of compliance with this requirement. The use of splash guards is a reasonable and cost effective solution to capturing overspray for situations where spraying of parts is necessary over a tank.

14-18 Response: Please see Response to Comment 2-18.

VALLEY–TODECO, INC.

12975 BRADLEY AVENUE, SYLMAR, CALIFORNIA 91342 USA • TEL (818) 367-2261 • FAX (818) 364-6036

UPS Tracking Number:
1Z 104 3RR 01 6716 2603

February 9, 2018

Mr. Neil Fujiwara
Planning, Rule Development and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: Comments on SCAQMD Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

Dear Mr. Fujiwara:

Valley-Todeco, Inc. (Valley-Todeco) is pleased to submit the following comments on the January 19, 2018 preliminary draft rule language of South Coast Air Quality Management District's (SCAQMD) Proposed Amended Rule (PAR) 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations. Our California operations include a facility in Sylmar, California that will be directly impacted by PAR 1469. These comments are in addition to comments submitted on December 12, 2017.

Valley-Todeco is a wholly-owned subsidiary of Arconic Inc. (NYSE: ARNC). Arconic creates breakthrough products that shape industries. Working in close partnership with our customers, we solve complex engineering challenges to transform the way we fly, drive, build and power. Through the ingenuity of our people and cutting-edge advanced manufacturing techniques, we deliver these products at a quality and efficiency that ensure customer success and shareholder value.

Valley-Todeco is generally supportive of the SCAQMD's effort to develop an amended regulation to provide additional control of hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations to ensure that ambient air concentrations of hexavalent chromium remain protective of human health and the environment. We appreciate SCAQMD's continued interest in developing sound regulations that protect public health and the environment while minimizing unnecessary regulatory burdens on industry and offer the following additional comment to the SCAQMD for its consideration into the final amended Rule 1469.

Include a definition for buffing, grinding and polishing activities

In its's earlier comments, Valley-Todeco had expressed concern that the absence of a definition for "buffing, grinding and polishing activities" could result in an interpretation that activities unrelated to chromium electroplating and chromic acid anodizing operations under PAR 1469, e.g. grinding done for facility or equipment maintenance, should be subject to PAR 1469 requirements. Such activities are clearly outside of the stated purposed and applicability of PAR 1469 as stated in sections (a) and (b).

Based on information contained in the presentation slides of the 10th Working Group Meeting for PAR 1469[1], SCAQMD is considering specific conditions to address "wet" buffing, grinding and polishing activities. Valley-Todeco conducts wet grinding operations at its facility, including wet grinding of parts that have gone through chromium electroplating and chromic acid anodizing operations. The wet grinding is done under a flood of coolant that used to carry grindings away from the grinding wheel. Given the flooding coolant, there is no potential to generate particulate emissions with wet grinding. PAR 1469 section (f) already contains housekeeping provisions that include the cleanup of spilled materials and potentially contaminated surfaces. These provisions should ensure that drying and tracking of spilled coolant and grindings is prevented. Valley-Todeco is concerned that inclusion of wet grinding within the scope of buffing, grinding and polishing operations will result in additional costs for enclosures with no commensurate environmental benefit. 15-1

SCAQMD has previously considered wet grinding and maintenance grinding in its development and adoption of Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities and concluded that these were outside of the scope of that rule. The applicability section of Rule 1430 states "[T]his rule does not apply to metal grinding or metal cutting conducted under a continuous flood of metal removal fluid, or grinding activities conducted to maintain or repair equipment at the facility."

Therefore, Valley-Todeco recommends that PAR 1469 be revised by adding a definition for buffing, grinding, and polishing operations to read as follows:

> BUFFING, GRINDING, OR POLISHING means the buffing, grinding or polishing of parts that have gone through a process that includes one or more Tier I or Tier II Hexavalent Chromium-Containing Tanks. This does not include buffing, grinding or polishing conducted under a continuous flood of metal removal fluid or conducted to maintain or repair equipment at the facility.

Adding this definition is consistent with other SCAQMD rules and will provided the needed clarification to the intent of PAR 1469.

Conclusion

Valley-Todeco appreciates the opportunity to comment on PAR 1469. We are hopeful that our comments will help SCAQMD to further improve PAR 1469 and create a final amended rule that incorporates flexible and cost-effective compliance provisions for all affected facilities.

[1] Working Group Meeting #10, slide 19. http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1469/par1469_wg10_020618.pdf?sfvrsn=6 Accessed February 8, 2018.

Should you require clarification or further discussion of our comments, please contact Dean Richardson (Valley-Todeco's environmental manager) at dean.richardson@ Arconic.com or (818) 281-5342.

Sincerely,

Kristin March
Director of Operations
Valley Todeco, Inc.
Arconic Fastening Systems
Kristin.March@arconic.com

Responses to Valley Todeco, Inc. Comment Letter from, submitted 2/9/18

15-1 Response: An exemption has been added under paragraph (r)(2) that addresses the requirements to conduct all buffing/grinding/polishing operations within a building enclosure, and to install a barrier between the buffing/grinding polishing area and tank area, when operated under a continuous flood of metal removal fluid. Please also see Response to Comment 10-1.

ITAR
ISO 9001
AS 9100
ISO/TS 16949
Nadcap-CP
FAA Repair Station
CERT. #MZTR048L

February 22, 2018

Eugene Kang
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Reference: PAR 1469 - HEXAVALENT CHROMIUM EMISSIONS FROM CHROMIUM ELECTROPLATING AND CHROMIC ACID ANODIZING OPERATIONS, COMMENTS ON PORTIONS OF JANUARY 19, 2018, DRAFT RULE

We are writing to reiterate & expand on our verbal comments at the Stationary Source meeting on February 16, 2018 on PAR 1469 and from site visits at MSI. These comments are specifically for MSI but some may have application to other plating facilities.

1. Our major difficulty with PAR 1469 is section (e) (5) "Requirements for Building Enclosures". You & your staff have seen our facility but we are explaining our situation in more written detail so that others can understand our problem with the PAR (draft January 19, 2018.

MSI has one Hex Cr plating tank already permitted & controlled with a HEPA system. We have two small 24" x 30" chromate tanks that would qualify as a Tier II Cr tank due to T > 140 F. However, these 3 tanks are located in our Main Shop in building 1 which also contains about 180 tanks for multiple processing operations (Cd, Zn, Ni, Cu, Pb etc) all permitted under various SCAQMD rules (including R1426). Building 1 also houses our Precious Metal Department which includes about <u>100</u> tanks & is totally isolated from the Main Shop. 16-1

Building 1 is about 100' W x 200' L x 20' H. It was designed & built over 50 years ago and includes ventilated skylights, convection exhaust ambient air vents, fan & motor operated exhaust ambient air vents & other roof & wall openings. MSI has added multiple other exhaust ventilation systems which exhaust through the roof for specific process tanks to remove heat, fumes, & excessive moisture from the work space.

Overall we estimate that building 1 exhausts about 200,000 cfm of air from the work space. MSI does not have the resources, nor does it make sense to add HEPA control systems to all this volume of air to capture fugitive Cr emissions from one plating tank plus two small chromate tanks.

Metal Surfaces, Inc. 6060 Shull Street, Bell Gardens, CA 90201 Ph: (562)927-1331 Fax: 562-927-0692 www.metalsurfaces.com

Eugene Kang - AQMD
February 22, 2018
Page 2

We therefore suggest that (e) (5) be deleted or applicable only to roof exhausts within 15' – 20' of Tier II chrome tank. 16-1 (cont'd)

2. Section (e) (8) is too narrow in its scope with reference to OSHA regulations. We suggest it include reference to **conflicting requirements of the Universal Fire Code, Universal Building Code, Industrial Ventilation (A Manual of Recommended Practice for Design), or just good engineering practice for the design of ventilation systems for Industrial buildings utilized by the architects/mechanical engineering societies.** 16-2

3. Two additional sections of PAR 1469 require some clarification/modification:

a. Section (f) (8) "Abatement of Roof Surfaces" is totally overreaching & would be difficult to enforce fairly. We suggest (f) (8) be deleted or rewritten to simplify the requirements. 16-3

b. Section (g) (7) "Prohibited Compressed Air" needs to be rewritten. If the intent of this provision is to prevent the compressed air cleaning from creating stray air currents around a Tier I or II tank, then change the word "areas" in the 3rd & 4th line to "tank". If the intent is to prevent the liquid particles blown off the parts from becoming airborne or collecting on the floor, then require a shield behind the sprayed parts to stop the liquid particles.

If you need clarification of any our comments, please call me.

Sincerely,

Sam R Bell /Charles K Bell
Metal Surfaces, Inc.

Metal Surfaces, Inc. 6060 Shull Street, Bell Gardens, CA 90201 Ph: (562)927-1331 Fax: 562-927-0692 www.metalsurfaces.com

Responses to Metal Surfaces Incorporated Comment Letter, submitted 2/22/18

16-1 Response: SCAQMD staff has visited Metal Surfaces Inc. on multiple occasions throughout the rulemaking process. Although there is currently no source-specific toxics rule that prohibits the ventilation configuration at MSI, the SCAQMD staff has expressed concern that there are multiple non-Rule 1469 tanks that are currently ventilated to the ambient air. Many of these tanks will likely be covered under PAR 1426 which covers non-hexavalent chromium plating tanks such as cadmium, nickel, zinc, lead, and copper. Regarding the comment on roof vents, paragraph (e)(4) requires roof openings located within 15 feet from the edge of any Tier II or Tier III Tank to be closed or controlled. Please also see Response to Comment 6-13.

16-2 Response: Paragraph (e)(6) has been revised to allow consideration of other municipal codes or requirements directly related to worker safety. This will allow the necessary flexibility. Please also see Responses to Comment 5-1 and 18-10.

16-3 Response: Paragraph (f)(8) has been revised to apply to cutting of roof surfaces of building enclosures. Requirements include 1) that affected roof surface areas be cleaned by HEPA vacuum prior to cutting, 2) fugitive emissions be minimized by using a method(s) such as constructing a temporary enclosure and HEPA vacuuming, and 3) notifying the Executive Officer at least 48 hours prior to the commencement of any work being performed by calling 1-800-CUT-SMOG.

Regarding the comment on the intent of the requirement for compressed air cleaning, please see Responses to Comments 2-18 and 8-11.

From: Lisa Lappin [mailto:ljtutoring@gmail.com]
Sent: Thursday, February 22, 2018 11:17 PM
To: Wayne Nastri <wnastri@aqmd.gov>; Susan Nakamura <SNakamura@aqmd.gov>; Philip Fine <pfine@aqmd.gov>; Dr. Joseph K. Lyou <jlyou@aqmd.gov>; Rachel Uranga <ruranga@scng.com>; Tony Barboza <tony.barboza@latimes.com>; Jane Williams <dcapjane@aol.com>; Clerk of Board <Front_PC@aqmd.gov>; Liza Tucker <liza@consumerwatchdog.org>; Laurie Guillen <laurieguillen1987@gmail.com>; Ho, Jessica <jho@bos.lacounty.gov>; Magdalena Guillen <bluegirl_76@hotmail.com>; Maya Golden-Krasner <mdgoldenkrasner@gmail.com>; Sonia Olmos <sonia4paramountschools@gmail.com>; Public Advisor <publicadvisor@aqmd.gov>; Rebecca Plevin <rebecca.plevin@gmail.com>; Robina Suwol <calisafe@earthlink.net>
Subject: Public Comment on rule 1469

Dear Mr. Nastri and SCAQMD decision makers,
The following letter was signed by 965 petitioners asking for you to put the needs of low-income communities ahead of the profits of 117 companies. Each petitioner represents many more who can not (children) or will not (adults without documentation or afraid of retaliation) sign. Why should the profit margin for 117 companies take precedence over the critical health needs of numerous communities throughout Southern CA impacted by hexavlent chromium that is endangering human lives?

The petition and its signatures sent to all of you this evening should be entered into public comment. For the record, it reads as follows:

We, the undersigned, call on Mr. Wayne Nastri, CEO of South Coast Air Quality Management District (SCAQMD), to direct staff at SCAQMD to revise wording on proposed rule 1469, chrome plating and anodizing, in order to require that the 117 companies using hexavalent chromium be required to conduct continuous outdoor ambient air monitoring and install state of the art pollution control systems including HEPA filtration and negative air with total enclosure. We can not wait for a company to fail source testing. We needs these protections now! 17-1

Furthermore, we ask that SCAQMD seriously consider incentives for companies to use alternatives to the highly toxic chemical, hexavalent chromium, that is claiming the lives of innocent children whose immune systems are not strong enough to withstand the assault of these deadly chemicals. Europe has already banned hexavalent chromium for decorative uses and non essential purposes, requiring strict procedures that their defense industry must follow before getting approval for its use. We want California to join Europe in being a leader in the movement toward a less toxic environment for communities. There are solutions waiting to be discovered but your agency is not taking a lead in finding them and making them happen. 17-2

We believe that the health and safety of our children should be the priority for Southern California's air regulatory agency. Your agency was created to protect our region from breathing toxic air. SCAQMD decision makers, we are counting on all of you to listen to our cry for help. Please do your job and put the well being of the public, especially our children, ahead of the needs and desires of a long unregulated metal industry pushing for a weakened rule. Our children are nonnegotiable. 17-3

Please do your job and put the well being of the public, especially our children, ahead of the needs and desires of a long unregulated metal industry pushing for a weakened rule. Our children are nonnegotiable. They are our future. Protect them Mr. Nastri.

Responses to Lisa Lappin Comment Email, submitted 2/22/18

17-1 Response: Please see Response to Comment 1-7.

PAR 1469 contains additional requirements which will reduce hexavalent chromium emissions including the installation of air pollution control devices, where triggered by PAR 1469 requirements.

17-2 Response: Please see Responses to Comments 3-8 and 9-2.

17-3 Response: Thank you for your comment. Please see Responses to Comments 9-1 and 9-2.

From: Bruce Greene [mailto:Bruce.Greene@hmfgroup.com]
Sent: Tuesday, February 27, 2018 10:08 AM
To: Neil Fujiwara <nfujiwara@aqmd.gov>
Cc: Eugene Kang <EKang@aqmd.gov>; Susan Nakamura <SNakamura@aqmd.gov>
Subject: Hixson Comments on PAR 1469

Neil,

Sorry for the late email but wanted to get you our comments on the latest version of PAR 1469 prior to the meeting.

Please see attached.

If you have any questions or comments, please feel free to contact me.

Thanks

Bruce Greene
Environmental/Health & Safety

Hixson Metal Finishing
829 Production Place
Newport Beach, CA 92663
Direct: 949.722.3459
Office: 800.900.9798
www.HMFgroup.com

Supporting Flight Excellence

PAR 1469 Review and Comments

(c) (23) – Enclosure Opening – This indicated that stacks for add on air pollution control devices subject to this rule are not considered an enclosure opening. In our case, we have a number of ventilation hoods that draw ambient air from the processing areas in order to create the ventilation required to make the PTE. These vents are directed to a wet scrubber (no HEPA) and are within 15 feet of some Tier I and Tier II tanks. We feel that that these should be exempted if used or located within a PTE and not be considered Enclosure Openings. 18-1

(c) (28) – Freeboard Height – As written, if you were using a foam blanket to control emissions, then your freeboard could be 4 – 6 inches of foam blanket along with the 8 inches that you are looking for on the freeboard. This could create a freeboard to solution level of 12 to 14 inches. 18-2

(c) (36) – Low Pressure Spray Nozzle – There should be a distinction from spay nozzles used in open space and those used inside a tank where the entire part and rack are lowered completely into the tank for rinsing. 18-3

(c) (59) – Tier II Tanks – the limit of 100 ppm at or above 160 degrees concerns me. In the past we have had some rinse tanks approach close to this limit. It would all depend upon when this tank would be sampled. There should be an exclusion of all rinse tanks since a majority of the time the tanks would be well below the 100 ppm (0 to 10 ppm from past testing). 18-4

(e) (1) – Building enclosures – If the tanks are located within a negative pressure PTE within a building enclosure or the building enclosure is a negative pressure PTE this should not be required. EPA Method 204 allows for 5% openings. 18-5

(e) (2) – Building enclosure openings – If the tanks are located within a negative pressure PTE within a building enclosure or the building enclosure is a negative pressure PTE this should not be required. EPA method 204 requires an inward flow into the building or PTE in excess of 200 fpm. 18-6

(e) (3) – Building enclosure openings facing sensitive receptors – If the tanks are located within a negative pressure PTE within a building enclosure or the building enclosure is a negative pressure PTE this should not be required. EPA method 204 requires an inward flow into the building or PTE in excess of 200 fpm. 18-7

(e) (4) – Roof Openings – We assume that these openings will not include the intakes for additional ventilation systems that are used to vent air through a wet (non-HEPA) scrubber in order to capture fugitive acid emissions and create the required ventilation for a PTE. 18-8

(e) (5) – Same as (e) (4) above 18-9

(e) (8) – This indicates prior to initial startup. What if the line is already in operation? 18-10

(f) (1) – Storage – This indicates "other substances that may contain hex chrome". Would this mean that all concrete material during any building/construction activities needs to be stored in an enclosed 18-11 storage area? Would this include stainless steel and other metals (to include parts from customers) that contain hex chrome? This should be rewritten to only pertain to materials that are used in the process of chromium plating or chromic acid anodizing. 18-11 (cont'd)

(f) (5) – Containers – A number of times these container will be reused or recycled and per other regulations are required to be triple rinsed. This section should include rinsing/cleaning operations. 18-12

(g) (1) (A) – Automated Lines – Processing solution will be dripped onto the trays, so it would be impossible to clean in a way that no visible dust or residue on the drip trays could be seen at any time. A periodic cleaning schedule should be indicated as once per day as you have indicated in (g) (2) (A). 18-13

(h)(4)(A)(iv) and (v) – The parameters as forth in this section would still penalize a processor if there were multiple small tanks that were vented to a single scrubber. In our case the small tanks in building 3, using the requirements as indicated in section (h)(4)(A)(v) would give us a emission limit of 0.18596 mg/hr-ft2 since we are above the 5,000 cfm and in a PTE. Would this not push an operator to instead install 2 smaller scrubbers that are rated less than 5,000 cfm and therefore be given an emission limit of 0.2 mg/hr-ft2 per scrubber or 0.4 mg/hr-ft2 total. This is gaming the system. This section also does not address how electrolytic and non-electrolytic tanks should be tested if vented to the same scrubber. 18-14

(h)(5) – Ventilation Design – If an alternative design is approved by the executive officer, the design should be allowed. Can we add at the end of the section "or as approved by the Executive Officer" 18-15

(l)(1) – Chemical Fume suppressants – Question. Can these suppressants be used on non-electrolytic tanks to comply with some provisions as indicated in Alternative Compliance Methods and those using Trivalent chromium tanks? If this is the case then this section only covers electrolytic tanks. 18-16

Responses to Hixson Metal Finishing Comment Letter, submitted 2/27/18

18-1 Response: The definition for Enclosure Opening has been revised and excludes stacks, ducts, and openings to accommodate stacks and ducts.

18-2 Response: The requirements for freeboard height have been removed from PAR 1469.

18-3 Response: PAR 1469 does not require low pressure spray nozzles to be utilized when the spray nozzle is used inside a tank and where the entire part and equipment are lowered completely into the tank for rinsing.

18-4 Response: A Tier II Tank is defined under paragraph (c)(58) as: *"a tank that is operated or permitted to operate by the SCAQMD within the range of temperatures and corresponding hexavalent chromium concentrations specified in Appendix 10 and is not a Tier III Hexavalent Chromium Tank"* Under Appendix 10, the hexavalent chromium concentrations for a Tier II Tanks must remain in the concentration range for the specified temperature and be required to comply with paragraph (h)(4). Tanks that exceed hexavalent chromium concentration for a corresponding temperature are considered a Tier III Tank and must comply with subparagraph (h)(4)(A). The following tank concentrations define a Tier II Tank, depending on temperature:

Temperature (° F)	Tier II Tank Hexavalent Chromium Concentration (ppm)	Tier III Tank Hexavalent Chromium Concentration (ppm)
140 to <145° F	5,200 to <10,400	≥10,400
145 to <150° F	2,700 to <5,500	≥5,500
150 to <155° F	1,400 to <2,900	≥2,900
155 to <160° F	700 to <1,600	≥1,600
160 to <165° F	400 to <800	≥800
165 to <170° F	180 to <400	≥400
≥170° F	≥100 to <200	≥200

18-5 Response: PAR 1469 requires 3.5% building enclosure openings as a fraction of the building envelope (i.e. area of walls, floor and horizontal projection of roof) for both a building enclosure and a PTE.

Please also see Response to Comment 6-11.

18-6 Response: PAR 1469 paragraph (e)(2) requires ". . *.that any building enclosure openings that open to the exterior and are on opposite ends of the building enclosure where air movement can pass through are not simultaneously open except during the passage of vehicles, equipment or people, not to exceed two hours per operating day, by closing. . ."* or using a specified method, including automated doors, overlapping plastic flaps, vestibule, airlock system, etc. This requirement is applicable only to building enclosures, not to permanent total enclosures.

18-7 Response: PAR 1469 paragraph (e)(3) requires that *"Except for the movement of vehicles, equipment or people, close any building enclosure opening or use any of the methods listed in subparagraphs (e)(1)(A) through (e)(1)(E), that directly faces and opens towards the nearest: (A) Sensitive receptor, with the exception of a school, that is located within 1,000 feet, as measured from the property line of the sensitive receptor to the building enclosure opening; and (B) School that is located within 1,000 feet, as measured from the property line of the school or early education center to the building enclosure opening."* This requirement is applicable only to building enclosures, not to permanent total enclosures.

18-8 Response: Please see Response to Comment 6-13.

18-9 Response: Please see Response to Comment 18-8.

18-10 Response: PAR 1469 requires facilities existing or already in operation to submit the written notification that indicates a conflict between PAR 1469 requirements and OSHA, CAL-OSHA, or other municipal codes or agency requirements directly related to worker safety for review and approval no later than [30 day after Date of Rule Adoption].

18-11 Response: The requirement to store other substances that may contain hexavalent chromium in a closed container in an enclosed storage area when not in use was a previous requirement. PAR 1469 did not amend the requirement. This requirement only pertains to materials that are used in the process of chromium electroplating or chromic acid anodizing, not to concrete or stainless steel.

18-12 Response: One intent of PAR 1469 is to reduce and/or eliminate fugitive hexavalent chromium emissions from housekeeping activities. Containers that contain chromium-containing waste material shall be kept closed at all times except when being filled or emptied. Containers that are being rinsed do not contain hexavalent chromium waste material and therefore, are not subject to this provision. Paragraph (f)(5) allows the operator to identify the appropriate methods to ensure wastes generated from housekeeping activities do not lead to fugitive emissions.

18-13 Response: PAR 1469 requires that facilities keep trays or other containment equipment such that the liquid is captured and returned to the tank(s), and cleaned such that there is no accumulation of visible dust or residue on the drip tray or other containment equipment. PAR 1469 adds an additional requirement of prohibiting the accumulation of residue on the drip tray or other containment equipment. Please also see Responses to Comments 8-10 and 21-5.

18-14 Response: The emission limit under clause (h)(4)(A)(iii) is specific to air pollution control equipment that does not serve electrolytic tanks and the ventilation system has a maximum exhaust rate of 5,000 cfm or less. Clause (h)(4)(A)(iv) was added at the request of the industry, specifically to address situations where electrolytic tanks are vented to the same air pollution control as non-electrolytic tanks. As such, it was necessary to develop an emission factor that reflects emissions coming from both sources. The emission factor under clause (h)(4)(A)(iv) was developed with the input of the industry. The proposed language allows facility operators to design air pollution control for electrolytic as well as non-electrolytic tanks to provide flexibility in engineering a solution to unique issues at that facility, while meeting the rule limits.

18-15 Response: PAR 1469 has been modified to allow owners or operators to have an alternative design if approved by the Executive Officer.

18-16 Response: PAR 1469 allows facilities to utilize alternative methods to control hexavalent chromium emissions under subsection (i) with the approval of the Executive Officer.

BOEING

The Boeing Company
4000 Lakewood Blvd
Long Beach, CA 90808

March 01, 2018

SCAQMD
21865 E. Copley Drive
Diamond Bar, CA 91765

ATTN: Neil Fujiwara
Planning, Rule Development and Area Sources

Re: SCAQMD Rule 1469 Proposed Amendments

Thank you for the opportunity to provide comments relating to the proposed amendments to SCAQMD Rule 1469 (Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations). Boeing requests that the following changes/clarifications be incorporated into the proposed amendments to the rule:

- Proposed Amended Rule 1469 contains a number of new requirements that appear to be in force immediately upon adoption of the proposed rule. These include the following:
  - (f)(4): Cleaning, used an approved cleaning method – Sites may have to purchase new equipment, such as HEPA vacuums, to comply with requirement. 19-1
  - (f)(6): Cleaning floors within 20 feet of buffing, grinding, or polishing workstations – Sites may have to purchase new equipment, such as HEPA vacuums, to comply with requirement. 19-2
  - (g)(2)(B): With respect to low pressure water nozzles, sites may have to purchase and install new equipment to meet requirement. 19-3
  - (g)(3): New labels for each tank will be required to reflect additional information that is specified. 19-4
  - (g)(7): Installation of barriers to separate air cleaning or drying operations from process tank lines 19-5
  - (n): Complete revision of existing Operation & Maintenance Plans to reflect new rule requirements 19-6
  - Appendix 4 (Table 4-1): Installation of temperature gauges and temperature data loggers will be required, as well as a new weekly inspection requirement for collection slots and push air manifolds. 19-7

A number of new requirements contained in the rule have been granted additional time to achieve compliance. Facilities must be given adequate time upon rule adoption to assure that the above-mentioned requirements, as well as other requirements contained within the proposed rule, are put into place in an orderly fashion that allows the facility to assure compliance with the final rule. The District should allow facilities 90 days from date of rule adoption to implement any new requirements contained in the proposed rule. 19-8

The Boeing Company
4000 Lakewood Blvd
Long Beach, CA 90808

- With respect to the proposed language in (f)(4), request that the proposed language be modified to reflect that cleaning only be performed each operating day, rather than the current "daily". 19-9
- Appendix 9 (Smoke Tests): The language in (3) Testing Conditions, does not reflect the updated language incorporated into (k)(6)(B)(7). Language in Appendix 9 (3) should be updated to reflect this language. 19-10

Boeing looks forward to continuing to work with District staff in the development of the proposed amendments to SCAQMD Rule 1469. If you should have any questions or require additional information, please do not hesitate to contact me.

William Pearce
Senior Environmental Engineer
Environmental Services
Environment, Health & Safety

Responses to Boeing Comment Letter, submitted 3/1/18

19-1 Response: The requirement to clean surfaces is an existing requirement under Rule 1469 (c)(4)(D) and would continue to be required under PAR 1469. As such, it is expected that facilities are currently using one or more approved methods to clean the areas described under PAR 1469 (f)(4), and no new equipment is expected to be required to clean surfaces under PAR 1469. Please also see Response to Comment 1-9.

19-2 Response: Acceptable cleaning methods to clean floors within 20 feet of a buffing, grinding, or polishing workstation include HEPA vacuuming, hand wiping with a damp cloth, and wet mopping, and alternative cleaning methods as approved by the Executive Officer. As such, PAR 1469 provides sufficient flexibility to comply using methods which do not require the purchase of new equipment and can be done immediately upon adoption of PAR 1469.

19-3 Response: A provision has been added to subparagraph (g)(2)(B) for low pressure nozzles to be used in lieu of splash guards and to allow compliance within 90 days after adoption of PAR 1469. This will provide facilities the time for purchase and installation of any new equipment necessary to meet this provision.

19-4 Response: A provision has been added to paragraph (g)(3) to allow compliance with the requirement to relabel tanks within 60 days after adoption of PAR 1469.

19-5 Response: The referenced requirement for barriers to separate air cleaning or drying operations from process tank lines is an existing requirement in Rule 1469 (c)(4)(F). The requirement has been clarified under PAR 1469 to include all tanks regulated under the proposal, including Tier II and Tier III Tanks.

19-6 Response: Paragraph (n)(9) requires a facility’s operation and maintenance plan to be revised within 90 days after rule adoption, and made available upon request to the Executive Officer to reflect the incorporation of the inspection and maintenance requirements for a device or monitoring equipment that is identified in Table 4-2 and Table 4-3 of Appendix 4.

19-7 Response: Paragraph (n)(4) has been revised to allow up to 90 days to install temperature gauges and temperature data loggers.

19-8 Response: For the requirements noted in responses to the previous comments, additional time has been provided for compliance, or an explanation has been given regarding the reasons why additional time is not necessary for compliance.

19-9 Response: The language under paragraph (f)(4) has been modified to require weekly cleaning.

19-10 Response: Appendix 9 has been amended to reflect the requested language.

msi
PRECISION ENGINEERED PLATING

ISO 9001-2000
AS 9100
Nadcap
FAA

March 1, 2018
Via Scan/Email and
First Class Mail

Eugene Kang
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Re: PAR 1469 HEXAVALENT CHROMIUM EMISSIONS FROM CHROMIUM ELECTROPLATING AND CHROMIC ACID ANODIZING OPERATIONS, ADDITIONAL COMMENTS ON PORTIONS OF JANUARY 19, 2018, AND FEBRUARY 25, 2018, DRAFT RULE

Dear Mr. Kang:

While understanding time is short, we are writing to suggest a "deminimis" provision be included in Subdivision (i) of PAR 1469 regarding small chromate tanks (Tier II or III) that are seldom utilized. For example, we have one tank that fits this description as we operate the tank less than ten (10) days per year. The rest of the year, the chromate solution is cold and covered or the solution is drummed and the tank is empty. We suspect other companies in the District may have similar situations with minimal use tanks. These tanks allow us to meet our customer's specifications and needs. For our tank, the business volume/revenue cannot begin to justify the cost for hooding, ventilating, controlling with a HEPA system, conducting source tests, etc.

We would like to see an exemption from PAR 1469 provisions (h)(2), (h)(4), and Appendix 7 for these tanks (as an example, tanks only used up to thirty (30) production days per year) as long as all other provisions of PAR 1469, have been met. Less stringent than HEPA control technics (for instance, fume suppressants, polyballs, or other "in tank" techniques) should meet the SCAQMD objectives for this rule. 20-1

METAL SURFACES, INC. 6060 Shull St., Bell Gardens, CA 90201-6297. Mail: PO Box 5001, Bell Gardens, CA 90202-5001.
Tel: (562)-927-1331, Fax (562)-927-0922 www.metalsurfaces.com

Eugene Kang
South Coast Air Quality Managment District
March 1, 2018
Page 2

We do appreciate the District's consideration given to this suggestion, to the prior comments referred to in our February 22, 2018, letter, and as discussed at the 11th Working Group Meeting on February 27, 2018.

Thank you for your consideration. Please contact us with questions, suggestions, or instructions.

Sincerely,

Charles K. Bell
Metal Surfaces, Inc.

cc: Neil Fugiwara
Wesley Turnbow - MFASC
Brian Ward - AAA Plating
Samuel R. Bell - MSI
George Petrasek - MSI
(via scan/email)

METAL SURFACES, INC., 6060 Shull St., Bell Gardens, CA 90201-6297 Mail: PO Box 5001, Bell Gardens, CA 90202-5001
Tel: (562) 927-1331, Fax: (562) 927-0692 www.metalsurfaces.com

Responses to Metal Surfaces Incorporated Comment Letter, submitted 3/1/18

20-1 Response: Uncontrolled chromate tanks that are designated as Tier II or Tier III Tanks under PAR 1469 have the potential for emissions that may be significant. Therefore, the request to provide a low usage exemption based on operation of less than 30 production days per year was not included in PAR 1469.

From: Bruce Greene <Bruce.Greene@hmfgroup.com>
Sent: Thursday, March 8, 2018 2:19 PM
To: Neil Fujiwara; Eugene Kang
Cc: Susan Nakamura
Subject: Hixson Metal Finishing - PAR 1469 Comments
Attachments: PAR 1469 Review and Comments_030818.docx

Neil,

Please see the attached for comments on the proposed draft rule language of Rule 1469 as provided on February 25, 2018.

If you have any comments or questions, please feel free to contact me.

Thanks

Bruce Greene
Environmental/Health & Safety

Hixson Metal Finishing
829 Production Place
Newport Beach, CA 92663
Direct: 949.722.3459
Office: 800.900.9798
www.HMFgroup.com

Supporting Flight Excellence

PAR 1469 Comments

(d)(5) – I may be reading this wrong but as written this prohibits running any tier I – III process tank within a building enclosure. Shouldn't this prohibit running a tanks unless it is within a building enclosure? 21-1

(e)(2) – Building Enclosure Openings - If the building enclosure is considered a PTE with negative air, this provision should not apply. As per EPA Method 204 a minimum of 200 fpm inward flow velocity must be maintained. 21-2

(e)(3) – Building Enclosure Openings - If the building enclosure is considered a PTE with negative air, this provision should not apply. As per EPA Method 204 a minimum of 200 fpm inward flow velocity must be maintained. 21-3

(f)(1) – Storage – As written with the words "or other substances that may contain hexavalent chromium" this would technically require all concrete, stainless steel, parts/assemblies that have been plated, liquid chromic waste, etc. to be stored in a closed container within a closed storage area. This should be more closely defined to include only make up chemicals or chemicals used in the plating process. 21-4

(g)(1)(A) – Automated Lines, Drip Trays – There is no way to completely eliminate the dripping of process solutions on the drip trays and therefore you cannot keep them clean at all time. A time interval should be provided in order to clean the trays as in once per day. 21-5

(h)(4)(A)(iii) and (iv) – The parameters as forth in this section would still penalize a processor if there were multiple small tanks that were vented to a single scrubber. In our case the small tanks in building 3, using the requirements as indicated in these sections would give us an emission limit of 0.18596 mg/hr since we are above the 5,000 CFM. Would this not push an operator to instead install 2 smaller scrubbers that are rated less than 5,000 CFM and therefore be given an emission limit of 0.2 mg/hr per scrubber or 0.4 mg/hr total. This is gaming the system. Also, as written, since 1 of my tanks is electrolytic, this would mean that the emissions from all 8 of my tanks (Tiers I, II and III since permitted) that are controlled by the scrubber would have to meet the 0.0015 mg/amp hr emission limit combined. This would allow a smaller shop that may only have 1 or 2 scrubbed tanks the same emissions limits but with far fewer operating tanks. This would also push operators not to scrub Tier I and Tier II tanks since the emission limit would be shared with all scrubbed tanks. 21-6

(h)(6) – Ventilation Design - Can the statement "or as approved by the executive officer" be added at the end 21-7

(k)(2)(c) – This refers to appendix 10. I think it should be appendix 9 21-8

(k)(6)(A)(i) – Can we add "or as approved by the executive officer" at the end 21-9

Appendix 2, line 16 – The 5% allowance should be noted if the compliance status report covers a PTE. 21-10

Responses to Hixson Metal Finishing Comment Email, submitted 3/8/18

21-1	Response:	Paragraph (d)(5) requires *"*Operate any Tier II or Tier III Hexavalent Chromium Tank within a building enclosure that meets the requirements of subdivision (e)*"*. The intent is that all Tier I, Tier II, and Tier III Tanks must be operated within an enclosure; however, only Tier II and Tier III Tanks are subject to the building enclosure requirements as described in subdivision (e).
21-2	Response:	The requirements to limit cross draft under paragraph (e)(2) are applicable only to building enclosures, not to PTEs.
21-3	Response:	The requirements to close doors that directly face the nearest sensitive receptor, excluding schools, within 1,000 feet and directly face the nearest school within 1,000 feet under paragraph (e)(3) are applicable only to building enclosures, not to PTEs.
21-4	Response:	The language under paragraph (f)(1) is existing language in Rule 1469(c)(4)(A) and no amendments are proposed. Please also see Responses to Comment 8-9 and Comment 18-11.
21-5	Response:	The language under paragraph (g)(1) is existing language in Rule 1469(c)(4)(H)(i) and no amendments are proposed.
21-6	Response:	The emission limit under clause (h)(4)(A)(iii) is specific to air pollution control equipment that does not serve electrolytic tanks. Clause (h)(4)(A)(iv) was added at the request of the industry stakeholders, specifically to address situations where electrolytic tanks are vented to the same air pollution control as non-electrolytic tanks. As such, it was necessary to develop an emission factor that reflects emissions coming from both sources. The emission factor under clause (h)(4)(A)(iv) was developed with the input of industry stakeholders. The proposed language allows facility operators to design air pollution control for electrolytic as well as non-electrolytic tanks to provide flexibility in engineering a solution to unique issues at that facility, while meeting the rule limits.
21-7	Response:	Please see Response to Comment 8-16.
21-8	Response:	The reference in subparagraph (k)(2)(C) has been revised to Appendix 9.
21-9	Response:	Executive Officer discretion is already incorporated into this language and no further revision is required.
21-10	Response:	Under PAR 1469, building enclosures as well as PTEs are required to meet a limit of 3.5% building openings as a ratio of the building envelope. Therefore, no modification to Appendix 2 is necessary.

Comment and Response to Felipe Aguirre Comment Email, submitted 3/15/18

Comment Read into the Record at 3/16/18 Stationary Source Committee Meeting

Comment:	I wish to ensure AQMD places monitors at all schools that are 1500 feet from the source of hexavalent chromium such as the Heliotrope Elementary School here in Maywood which is located across the street from Cooks Induction Heating.
Response:	Cook's Induction Heating is not a Rule 1469 facility, but rather a heat treating facility that would be subject to a future rule for heat treating.

From: Universal Metal Plating <universalmetalplating@verizon.net>
Sent: Wednesday, April 4, 2018 7:41 PM
To: Neil Fujiwara
Subject: Rule 1469

Hello Neil

I just wanted to clear up some information about the working group meeting this morning.

1. The phase out for hexavalent chromium for decorative plating. 22-1
    a. Is this for all decorative plating shops to move to trivalent chromium?
    b. Or if you have H.E.P.A. filter in place will you be able to continue doing business?

2. When fume suppressants are to be eliminated. 22-2
    a. If you have pollution controls in place will you still be able to use hex chrome?
    b. By 2021 will it matter how many amp hours or how few amp hours used that you will still be able to use hex chrome?

By 2021 will amp hours matter on if you need to have pollution controls or will any decorative plating shop need to have controls installed no matter the amp hours used? 22-3

Will hex chrome eventually be phased out in Southern California? 22-4

Will it matter if a decorative plating shop have a permanent total enclosure to phase out hex chrome? 22-5

I understand that most of the problems are coming from the hex chrome anodize shops but this is one of the first time that decorative shops have been called to phase out hex chrome. Is there anything that can be done to continue using hex chrome or is it being phased out completely? 22-6

Just a few questions I have if you can please answer them when you have time.

Thank you,

Jose

Jose De Jesus Martinez
Universal Metal Plating
1526 W. First St.
Azusa, CA 91702
(626) 969-7932 / (626) 969-7931
admin@universalmetalplating.com
http://www.universalmetalplating.com

Responses to Universal Metal Plating Comment Email, submitted 4/4/18

22-1 Response: As discussed in PAR 1469 Working Group #12, staff's recommendation is to conduct a pilot study and investigate available technology options for alternatives to hexavalent chromium for all applications, including decorative chromium. Trivalent chromium electroplating is an alternative that may be recommended. At this time, it is not possible to predict how extensive the phase-out would be, if any, or what other control measures might be allowed in lieu of a complete phase-out. A phase-out if proposed may allow the use of hexavalent chromium under specific conditions or it may be a complete prohibition.

22-2 Response: PAR 1469 does not prohibit the use of hexavalent chromium. If a wetting agent chemical fume suppressant is not certified, the owner or operator may install an add-on air pollution control device or use an SCAQMD approved alternative that is equally effective as the emission limit required for a wetting agent chemical fume suppressant. While PAR 1469 does not limit the amount of ampere-hours to use a hexavalent chromium, owners or operators shall still be subject to the emission limits with corresponding ampere-hour thresholds listed in paragraph (h)(2)

22-3 Response: Facilities that are eligible to utilize a certified wetting agent chemical fume suppressant as their only form of control is subject to either a 20,000 annual ampere-hour limit if located less than or equal to 330 feet to a sensitive receptor or a 50,000 annual ampere-hour limit if located more than 330 feet to a sensitive receptor. In the event that wetting agent chemical fume suppressants are not available, the facility would need to install an add-on air pollution control device or use an SCAQMD approved alternative that is equally effective as the emission limit required for a wetting agent chemical fume suppressant.

22-4 Response: PAR 1469 includes provisions for owners and operators of facilities who choose to phase-out the use of hexavalent chromium to have fewer requirements than if they continued with the use of hexavalent chromium. PAR 1469 does not include a requirement for the phase-out of hexavalent chromium use for all facilities. Please see Response to Comment 22-1.

22-5 Response: Please see Response to Comment 22-4.

22-6 Response: Please see Responses to Comments 22-2, 22-3, and 22-4.

From: Universal Metal Plating <universalmetalplating@verizon.net>
Sent: Friday, April 6, 2018 7:30 PM
To: Neil Fujiwara
Subject: RE: Rule 1469

Hello Neil

Just another question about what makes the reverse strip tank a tier 3 chrome tank? 23-1

We strip the chrome in our chrome strip tank which is muriatic acid not an electroplating tank. Then we use the reverse strip tank to remove the nickel and copper of die-cast and brass pieces.

Can you please clear this up for me?

Thank you,

Jose

Jose De Jesus Martinez
Universal Metal Plating
1526 W. First St.
Azusa, CA 91702
(626) 969-7932 / (626) 969-7931
admin@universalmetalplating.com
http://www.universalmetalplating.com

From: Neil Fujiwara [mailto:nfujiwara@aqmd.gov]
Sent: Thursday, April 05, 2018 7:42 AM
To: Universal Metal Plating <universalmetalplating@verizon.net>
Subject: RE: Rule 1469

Hi Jose,

The phase out of hexavalent chromium is an option for facility to avoid installing add-on controls. We have received comments from various stakeholders to prohibit the use of both CFS and hexavalent chromium (if an alternative is available). Rather than outright ban either substance, pilot studies of alternatives of hexavalent chromium and a re-certification process of chemical fume suppressants would take place following the adoption of PAR 1469. Most of your questions seem to be related to the results of both the re-certification of CFS and the pilot studies. If hypothetically CFS are eliminated, under PAR 1469 a facility may continue to use hexavalent chromium if meeting the emission limit.

I hope this at least partially answers some of your questions.

Please contact me if you have additional questions.

Thanks

Neil Fujiwara
Air Quality Specialist

Response to Universal Plating Comment Email, submitted 4/6/18

23-1 Response: Stripping tanks may be considered a Tier III Hexavalent Chromium Tank as it has potential to be a source of hexavalent chromium emissions. Stripping or reverse plating tanks use an electrical current to remove a layer of metal. The electrical current can create hydrogen gas, which forms small bubbles that have a high misting potential, similar to electrolytic tanks. This can lead to hexavalent chromium emissions if there is a high enough concentration of hexavalent chromium in the tank. Based on site visits, staff identified stripping tanks (which are electrolytic) at facilities with a hexavalent chromium tank concentration above 1,000 ppm, thus meeting the definition of a Tier III Tank.

From: Pearce (US), William R <william.r.pearce@boeing.com>
Sent: Thursday, April 19, 2018 9:09 PM
To: Neil Fujiwara
Subject: FW: PAR 1469 Comment Letter
Attachments: PAR146903012018.pdf

Sorry, misunderstood your voicemail. The issue with (n) is that we need to take our existing Operation & Maintenance Plan that is in effect currently and completely revise to include all new requirements that are contained in the rule. This will also include the development of new recordkeeping forms and revision of existing recordkeeping forms to match the new requirements. Also will need to train employees with respect to the new O&M Plan. Not a simple task due to the increased complexity of the proposed rule if the plan and associated documents are to be prepared correctly. Also, this is being completed in conjunction with assuring all other requirements in the proposed rule are being met. Boeing believes the request for 90 days is appropriate under these circumstances. 24-1

Let me know if you need anything and will see you tomorrow.

Response to Boeing Comment Email, submitted on 4/19/18

24-1 Response: The due date for a revised operational and maintenance plan has been revised under paragraph (n)(9) as follows: "*No later than [90 Days After Date of Adoption], the facility's operation and maintenance plan shall be revised and made available upon request to the Executive Officer to reflect the incorporation of the inspection and maintenance requirements for a device or monitoring equipment that is identified in Table 4-2 and Table 4-3 of Appendix 4 and shall include the elements required in subparagraphs (n)(5)(A) and (n)(5)(B).*"

From: Roger Sanchez <rsanchez@picoriveraplating.com>
Sent: Wednesday, May 2, 2018 3:07 PM
To: Neil Fujiwara
Cc: Jillian Wong; Susan Nakamura; Eugene Kang; Robert Gottschalk
Subject: RE: PAR 1469 Follow-Up: Stationary Source Committee Meeting 4/20/18

Neil

Regarding rule 1469 my main concerns was to make sure that AQMD'S Staff understands that California is losing business right and left do to the fact of to many rules and regulations that affect not only metal finishing shops but business in general.
We don't plate Chrome or Nickel the only Finish we do is Zinc plating only so 1469 RULE Might not be a big issue for us but is always a concern once again before a final decision is done for rule 1469 I ask all of you to consider every one's comments and work with us. 25-1

At this time I don't consider a need to meet or have a meeting but if you have any other questions please let me know thanks.

Good day to you.

Roger

Response to Pico Rivera Plating Comment Email, submitted 5/2/2018

25-1 Response: Thank you for your comment. The SCAQMD staff has worked with stakeholders throughout the rulemaking process to develop a proposal that is health protective and with consideration of cost impacts to facilities.

From: Robina [mailto:robinasuwol@earthlink.net]
Sent: Tuesday, July 17, 2018 11:31 AM
To: Neil Fujiwara <nfujiwara@aqmd.gov<mailto:nfujiwara@aqmd.gov>>; Susan Nakamura <SNakamura@aqmd.gov<mailto:SNakamura@aqmd.gov>>
Subject: Re: Concerns Surrounding NEW School Definition -Page 9

Dear Neil & Susan,

On page #9 I note that the definition of schools has been changed and does not include early education, pre-schools, Early Headstart and Headstart.Perhaps this was an unintentional error. Can you please include them in the definition. Thank you so very much. 26-1

Warm Regards,

Robina

Robina Suwol
Executive Director
California Safe Schools
818.785.5515 office
818.261.7965 cell
www.calisafe.org<http://www.calisafe.org>

Responses to Robina Suwol Comment Email, submitted 7/17/18

26-1 Response: The definition of SCHOOL has been revised under paragraph (c)(47) as follows: *"School means any public or private school, including juvenile detention facilities with classrooms, used for the education of more than 12 children at the school in kindergarten through grade 12. School also means an Early Learning and Developmental Program by the U.S. Department of Education or any state or local early learning and development programs such as pre-schools, Early Head Start, Head Start, First Five, and Child Development Centers. A school does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property."*

From: Pearce (US), William R <william.r.pearce@boeing.com>
Sent: Tuesday, July 17, 2018 7:25 AM
To: Susan Nakamura
Cc: Neil Fujiwara
Subject: PAR 1469 Comments

Just some quick comments (not inclusive) on PAR 1469 that was released on Friday. Formal comments to follow. Please let me know if you have any questions.

- (c)(6) Approved cleaning method is too restrictive. The language in SCAQMD Rule 1420 allows the following: "Clean by wet wash, wet mop, or with a vacuum in a manner that does not generate fugitive lead dust". Proposed language eliminates ability to use walk behind wet sweepers to clean floors without going through a time-consuming and unnecessary process for District approval. Language should be revised to read as follows: 27-1

  "Approved cleaning method means cleaning by wet wash, wet mop, damp cloth, low pressure spray nozzle, HEPA vacuum, or other method as approved by the Executive Officer".

- (c)(29) has been revised to apparently state that fugitive emissions now include stack emissions. The District has always treated these two categories as separate in the way the emissions are treated in rules and how they are reported to the District. Language should be reinstated that excludes particulate matter emitted from an exhaust stack. 27-2

- (e)(2) now includes a requirement that building enclosure openings are not open more than two hours per operating day. Does the District envision that a system will now have to be put into place to track the time that these doors remain open to assure that the two hours per operating day requirement is not exceeded? 27-3

- (f)(6) requires that buffing, grinding, and polishing workstations have the floors cleaned within 20 feet on each day when these types of operations are conducted. Request that the District consider an exemption (as an incentive) for these types of operations when they are vented to a control device. 27-4

- (g)(3) requires that new labeling requirements are effective 30 days after rule adoption. This is a more complex and time consuming process than can be completed in 30 days due to the number of tanks involved and revision of the associated Health & Safety labels currently on the tanks to allow room for the new signage. Request that labeling requirements be effective 60 days after rule adoption. 27-5

- Appendix 9, #3 requires a minimum 12 point matrix for all tanks, regardless of size. Some of the tanks that will now be covered by the rule only have a surface area of 10 square feet, at least at the Boeing facility. Suggest that the District consider a sliding scale for the point matrix for these smaller tanks. 27-6

Bill Pearce
310-200-3155

Responses to Boeing Comment Email, submitted on 7/7/18

27-1 Response: The definition for APPROVED CLEANING METHOD has been modified to include the requested methods and reads as follows, "*...means cleaning using a wet mop, damp cloth, wet wash, low pressure spray nozzle, HEPA vacuum, or other method as approved by the Executive Officer.*"

27-2 Response: The definition of FUGITIVE EMISSION has been revised to restore the proposed exclusion of "*particulate matter emitted from an exhaust stack.*"

27-3 Response: PAR 1469 does not require a system or recordkeeping that would track the duration of when doors are open. The facility can decide what measures to If District staff have evidence that a door is open for more than two hours (e.g., by direct observation), then District staff would note a violation of paragraph (e)(2) and subsequent enforcement actions will occur.

27-4 Response: Staff does not have a specific exemption for operations vented to a control as material may still land on work space that could result in an accumulation of dust.

27-5 Response: Paragraph (g)(3) has been modified as follows: "*Beginning [60 Days After Date of Rule Adoption]…*"

27-6 Response: This is an existing requirement and not changed as a result of PAR 1469. Staff is not aware of any facilities which have been unable to meet this requirement in the current rule.

From: Brian Ward <brian@aaaplating.com>
Sent: Wednesday, August 8, 2018 2:42 PM
To: Neil Fujiwara
Subject: Re: PAR 1469 Notice of Public Hearing Documents

Neil-

Will companies on a phase out plan be required to complete another source test? 28-1

Thanks.

Brian Ward
AAA Plating and Inspection, Inc.
(310)637-1066

On Wed, 08 Aug 2018 13:53:16 -0700, Neil Fujiwara <nfujiwara@aqmd.gov>
wrote:

> To All Proposed Amended Rule (PAR) 1469 Stakeholders,
>
> As a reminder, the public hearing for PAR 1469 - Hexavalent Chromium
> Emissions from Chromium Electroplating and Chromic Acid Anodizing
> Operations is scheduled for the following time and location:
>
> Friday, September 7, 2018 at 9:00 AM
> SCAQMD Headquarters-Auditorium
> 21865 Copley Drive
> Diamond Bar, CA 91765
>
> Additionally, the following documents are available and can be
> accessed by clicking on the titles below:
>
> PAR 1469 Draft Rule
> Language<http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Ru
> les/1469/draft-par-1469_30-day-final_8-2018.pdf?sfvrsn=8>
> PAR 1469 Draft Staff
> Report<http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rule
> s/1469/draft-par-1469-staff-report_30-day-final_8-2018_complete.pdf?sf
> vrsn=8> Revised PAR 1469 Draft Socioeconomic Impact Assessment
> Report<http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rule
> s/1469/revised-draft-socio-report-par-1469-aug-7.pdf?sfvrsn=8>
>
> If you have any questions, please contact Neil Fujiwara, Air Quality
> Specialist, by phone at 909-396-3512 or e-mail at
> nfujiwara@aqmd.gov<mailto:nfujiwara@aqmd.gov>.

Responses to AAA Plating and Inspection, Inc. Comment Email, submitted on 8/8/2018

28-1 Response: If the owner or operator of a facility submits a Hexavalent Chromium Phase-Out Plan, the requirements of paragraph (h)(4) to vent a Tier III Hexavalent Chromium Tank to an add-on air pollution control device would no longer apply and no source test is required.

From: Pat V <Patv1.123@outlook.com>
Sent: Thursday, August 9, 2018 1:47 PM
To: Neil Fujiwara; Dr. Joseph K. Lyou; fourthdistrict@bos.lacounty.gov; kaya@ceh.org; geraldcerda@aol.com; Martha Camacho-Rodriguez; Mandi Bane; Public Advisor
Subject: RULE 1469 Stakeholders September 7, 2018 at 9:00am

Hello, As a resident of Paramount & community advocate I have the following concern on the date & time of the proposed public hearing for PAR 1469.
Why does the agency continue to hold these working " public hearings" during the times that our low income communities cannot attend or call in to these hearings? Communities that are afflicted by environmental toxins such as Hexavalent Chromium
are working class communities that do not have the luxury to take a day off to attend , some might not even have means of transportation to get there. I have attended several of these meetings & in contrast have found a lot of participation mostly by the metal industry. This does not fully engage the communities that are suffering from these problems. Your agency is suppose to protect our communities from environmental toxins.
I strongly urge you to reconsider the time & locations of these meetings. 29-1

Regards,
Sara Patricia Huezo
Social Eco Education
SEE

Responses to Sara Patricia Huezo Comment Email, submitted 8/9/18

29-1 Response: In an effort to promote community involvement during the rule development process for PAR 1469, staff held two of the 13 working group meetings during the evening at the Dollarhide Community Center in Compton. Working Group meetings held at SCAQMD headquarters also included a conference call option, which allowed members of the public to participate remotely. Also, staff held two informational meetings on August 28th and 29th, 2018 at 5:00 PM, in the Boyle Heights and El Monte communities. Documents related to the development of PAR 1469, such as presentations, are sent to working group members and can be found on the proposed rule page on SCAQMD's website (available on the internet at http://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules#1469). Staff have been available and responsive to questions from stakeholders and interested parties throughout the rulemaking process.

The Public Hearing for PAR 1469 is scheduled for 9 a.m. on November 2, 2018. The public hearings for adoption of SCAQMD rules occur during the SCAQMD Governing Board meetings, which are held on the first Friday of every month starting at 9 a.m. Members of the public who are unable to attend the public hearing in person and wish to submit written comments for review prior to the hearing must submit such comments to the Clerk of the Board on or before Tuesday, October 23, 2018, as noted in the Notice of Public Hearing. The public hearing is also webcast live on SCAQMD's website at http://www.aqmd.gov/home/news-events/webcast.

From: Wesley Turnbow <wturnbow@emeplating.com>
Sent: Tuesday, August 21, 2018 4:01 PM
To: Susan Nakamura
Cc: Neil Fujiwara
Subject: SCAQMD PAR1469 - More Thoughts About The Remaining MFASC Concerns

Hello Susan,

The MFASC has thought through your helpful responses to our issues and the modified language provided. Yet, we feel concerns still remain. Here they are:

1) Regarding the protection for small shops, Section (l)(7-9) on page 45. It boils down to if wetting agent chemical fume suppressants ultimately are not allowed, then on July 1, 2021 facilities may use an alternative. This as yet undetermined alternative has to meet <0.01 milligrams per ampere hour, be approved by the district (CARB, too?), used with their approval, and permitted. The SCAQMD is to test and approve materials, then provide a list. Facilities could choose from the list and comply. 30-1

This now seems to fall on the facilities to prove that an alternative is adequate and then jump through the hoops of approval and re-permitting. Can small facilities afford that and accomplish that in the time allowed?

2) Regarding the PTE triggers, Section (p)(4)(A) requires reporting of "any failed smoke test, any failed source test, any exceedance of a permitted ampere-hour limit, or any malfunction of a non-resettable ampere-hour meter" within "four hours of the incident or within four hours from the time the owner or operator of a facility knew or reasonably should have known". That's open for interpretation, and ominous. A reasonable scenario is that a shop is late in performing a semi-annual smoke test, they perform one and it fails. The shop immediately shuts down the process. They are now required to call it in. When should they have known about the failure? A day ago when they were supposed to run the test? The shop has probably run the tank after they reasonably should have known... PTE now required. 30-2

I think that tightening and editing a bit of rule language may alleviate these two concerns. What do you think?

-Wesley

-----Original Message-----
Sent on 8/16/2018:

Hi Wesley,

Please find attached a highlighted copy of PAR 1469 Draft Rule Language.

The requirements that were discussed this afternoon are highlighted and can be found on Page 45 and Page 68.

Please let me know if you have any questions.

Thank you

Neil Fujiwara
Air Quality Specialist

Responses to Wesley Turnbow Comment Email, submitted 8/21/18

30-1 Response: PAR 1469 allows facilities to utilize an SCAQMD approved alternative air pollution control technique to meet an equivalent emission rate of 0.01 mg/ampere-hour. As described in the staff report, the SCAQMD approved alternative air pollution control technique(s) will undergo an approval process by SCAQMD, in cooperation with CARB, that will include source tests conducted by staff. If smaller facilities utilize the SCAQMD-approved alternative air pollution control technique, the facility will not be required to conduct initial or recurring source tests. Eligible facilities will need to apply for permit modifications to their chromium electroplating or chromic acid anodizing processes. A SCAQMD approved alternative air pollution control technique will streamline the requirements on facilities and provide facilities with a lower cost option within the time allowed.

30-2 Response: In the event that the owner or operator of a facility is "late" conducting a semi-annual smoke test, the owner or operators of the facility would be in violation of subparagraph (m)(1)(E) and be subject to enforcement action. The owner or operator of a facility would be subject to the requirement to shut down all Tier II or Tier III Hexavalent Chromium Tanks that are associated with the failed smoke or slot velocity test after the test is conducted, not on the day when they needed to run the test to be compliant with the smoke test schedule specified in subparagraph (m)(1)(E). The facility would be subject to permanent total enclosure requirements if the tank associated with the failed smoke or slot velocity test is not shut-down following failure of the test.

MFASC
METAL FINISHING ASSOCIATION OF SOUTHERN CALIFORNIA, INC.

MFANC
METAL FINISHING ASSOCIATION OF NORTHERN CALIFORNIA, INC.

Comments on the Draft Socioeconomic Impact Assessment for PAR 1469

We are pleased to have the opportunity to provide comments on behalf of the Metal Finishing Association of Southern California (MFASC) on the South Coast Air Quality Management District's (SCAQMD's) draft Socioeconomic Impact Assessment (SIA) for Proposed Amended Rule (PAR) 1469.

While most of our specific comments represent instances where we criticize the draft SIA and suggest improvements to it, this should not detract from our appreciation for the notable effort the District staff have made in estimating the compliance costs and economic impacts of PAR 1469 and summarizing their analysis in the draft SIA. District staff have conducted an open and collaborative process with stakeholders to develop and analyze PAR 1469. The product of this effort – the proposed rule itself and its supporting documentation – have benefited from many discussions and sharing of information and perspectives. We hope these comments will contribute to an improved SIA and to further improvements in the proposed rule.

MFASC's Perspective on Economic Issues Associated with PAR 1469

31-1

The draft SIA estimates the costs that affected chromium electroplating and anodizing facilities in the SCAQMD will incur in complying with the requirements of PAR 1469 and then analyzes the economic impacts that will result from these compliance costs. The magnitude of the economic impacts that are projected depends directly on the magnitude of the compliance costs that are estimated.

The draft SIA estimates that affected facilities will incur compliance costs amounting to $2.6 - $4.3 million per year. We estimate costs higher than these. In an analysis in which we estimated compliance costs for a set of nine or ten MFASC member-owned facilities and then scaled up to all facilities in the District, we estimated costs of $6.5 million per year, about 50% more than the higher cost scenario estimate projected in the draft SIA. While SCAQMD staff and we shared data and agreed on many elements of the cost analysis, there remain in the draft SIA a few areas where we believe staff have missed some likely significant costs and have underestimated others.[1] We provide comments in this document on how the District staff can improve the cost estimates in the draft SIA.

Despite underestimating compliance costs, the draft SIA nevertheless finds that PAR 1469 will have significant and worrisome adverse economic impacts on the electroplating and anodizing industry. The draft SIA estimates that:

[1] Another reason why our cost estimates may be higher than those in the draft SIA is that our sample of nine or ten facilities from which we extrapolate to all 115 affected facilities may be representative of the MFASC membership but perhaps not entirely representative of the full set of affected facilities. In particular, our sample may over-represent anodizers (who the draft SIA estimates will face higher than average compliance costs per facility from PAR 1469) and under-represent decorative and hard chrome platers (who are estimated to face lower than average compliance costs, unless non-PFOS fume suppressants are not recertified).

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- The average electroplating/anodizing facility will face PAR 1469 compliance costs amounting to 1.8% to 3.3 % of revenues.

- The smaller facility segments of the industry will face even higher compliance burdens -- 3.4% to 7.4% of revenues on average for the 27 small decorative plating facilities, for example.

A regulatory cost burden of this magnitude will eliminate most or all of the average electroplating or anodizing facility's profit margins. By way of comparison, the job shop electroplating industry's pretax profit margin nationally over the past 27 years has averaged under 4%. (This is a low-margin, highly competitive industry.)

While the SCAQMD has not as a general matter established a level of cost impact relative to revenues that they consider threatening for a regulated industry, other regulatory agencies have. Both the Federal Environmental Protection Agency (EPA) and Occupational and Safety and Health Administration (OSHA) have adopted cost thresholds at 1% or 3% of revenues as levels of concern. EPA has said that 3% or more of revenues represents an "unquestionably significant" impact on small businesses. OSHA traditionally uses 1% of revenues and 5 to 10% of profits as thresholds of economic impact concern for their regulations. We're looking here at PAR 1469 costing 100% of profits for many facilities.

We fear that the compliance costs the draft SIA has projected for the industry in the four South Coast counties would cause a significant share of the industry to go out of business. Hundreds or even thousands of good jobs will be lost in the metal finishing industry and the industry's suppliers and customers. 31-1 Cont

Note that all MFASC members know of competitors nearby -- in Northern California, in San Diego, in Mexico and in other States -- that won't face these regulatory costs and that will take much of the South Coast producers' business if local firms were to try to raise their prices by 3% or 5% or 10% to cover the PAR 1469 costs. The findings in the draft SIA suggest that the local industry faces an unfortunate choice between absorbing the regulatory costs and seeing their already modest profitability vanish, and increasing prices to cover the regulatory costs and losing a significant portion of their business to nearby competitors who don't face the PAR 1469 costs.

Summary of Comments on the Draft SIA

We provide the following specific comments suggesting improvements to the draft SIA. If the draft SIA is improved as we suggest, it will further support the MFASC's concerns about the adverse impacts of PAR 1469.

- Capital costs for add-on APCDs will not show economies of scale to the extent assumed in the draft SIA. Larger systems will have lower unit costs than smaller systems, but not to the degree that District staff have estimated in the draft analysis.

- The O&M costs of an air pollution control system should be estimated in relation to the volume of airflow needing control, not to the capital costs of the system. Making this change to the

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manner in which O&M costs are estimated in the SIA will bring the estimates much closer to the available cost information for systems that are now operating.

- Costs to meet the enclosure requirements are underestimated. The enclosure provisions will require facilities to do more than meet the 3.5% limitation on openings in the building envelope. There will be additional costs to meet the cross-draft requirements and to provide supplemental ventilation at some facilities.

- The SIA underestimates costs for restrictions on spray rinsing of parts. The SIA estimates costs for these requirements by assuming that facilities with automated lines will install drip trays between each electroplating or anodizing tank and adjacent tanks. For many facilities with automated lines this won't be feasible, and alternative solutions should be costed out. Compliance costs should be estimated also for the facilities that do not have automated lines.

- Additional costs for source testing and for permitting should be included. The draft SIA estimates some costs, but misses the costs for labor hours that facility personnel will expend in managing these activities. The draft SIA also may underestimate the number of new permits that will need to be acquired and renewed as a result of PAR 1469.

- In view of the many uncertainties in estimating compliance costs, the sensitivity analysis in the draft SIA that aims to provide high and low compliance cost estimates and to bracket the likely true cost is important and should be expanded. The SIA should include more of the variables that lead to large uncertainties in estimating costs as differences that are analyzed in the low cost scenario versus the high cost scenario. A high cost scenario is not less reasonable or less likely to prevail than a low cost scenario, and implications in the draft SIA to the contrary should be deleted.

31-1 Cont

- The SIA's facility-based impact analysis is key in evaluating whether PAR 1469 will be affordable for the affected electroplating and anodizing facilities and in projecting the number of facilities that are likely to close because they will not be able to afford the PAR 1469 compliance costs. We appreciate the District staff's work to include this analysis in the draft SIA. While this analysis in the draft SIA addresses the average facility in each of the categories into which the industry has been divided, the final SIA should do better in portraying the variability in PAR 1469 compliance cost burden across all affected facilities in each category. We suggest a methodology by which District staff could use available data to estimate the facility-by-facility variation in cost burden (facility-by-facility ratio of compliance costs to revenues) and to project the number of facilities that are likely to find compliance not to be affordable. Such an analysis should be included in the final SIA.

Capital Costs for Add-on APCDs Will Not Show Economies of Scale to the Extent Assumed in the SIA

We appreciate the District staff's collaborative work with industry consultants to obtain actual incurred cost figures, vendor quotes, engineering estimates and other data with which to develop a relationship that projects the capital cost/cfm for different sized HEPA APCD systems. The individuals involved in this work ultimately agreed on a representative figure of $23/cfm for the capital cost of a relatively small system of approximately 5,000 cfm. While the seven capital cost estimates collected by the MFASC's consultants suggested a lower average figure of about $19.50/cfm, these individual estimates and this average figure did not include any costs for local approvals, building electrical upgrades (typically a thousand dollars or more for each system) and sales tax (5 - 7 % typically). The group judged $23/cfm to be a representative figure that might include the latter two of these additional items.[2] The figure of $23/cfm also matched the figure obtained by SCAQMD staff from an experienced Southern California 31-2

[2] We believe that the large number of local approvals typically required will likely result in costs exceeding $23/cfm when all costs are included. Unless the building has been built in the last several years – which none of the nine sample facilities in the MFASC's cost analysis have been -- when the company goes to the city to get a permit to install the APCD or upgrade the electrical, this will trigger requirements for a number of upgrades (tenant improvements) that may require the facility owner to bring the entire building up to current code. The upgrades can include:

- Seismic upgrades. Could include bracing of the roof and walls. Possible replacement of the entire roof structure and foundation upgrades.
- Electrical upgrades (do you have enough power to run all your equipment and the new scrubbers?). If not, you need to bring in new service that opens your entire electrical system to upgrades to meet current code.
- If you install anything on the roof, be prepared for equipment line of sight barriers as well as possible structural upgrades.
- Noise compliance studies may have to be conducted.
- Possible sound barriers may have to be installed.
- ADA compliance (Handicapped Parking, compliant paths of travel, ADA compliant bathrooms, etc.)
- The building will probably be reclassified as an H4 occupancy (High Hazard). This brings with it fire sprinkler requirements, fire and hazard alarm and monitoring, and 2- to 4-hour fire barrier walls between H4 and other occupancies. Though a number of cities don't seem to push it this could require the replacement of all ductwork with CPVC or installation of fire heads in all ductwork.
- This can also affect secondary containment. If you have to install fire sprinklers or increase their capacity, the water from the sprinklers (20 minutes) also has to be taken into account for secondary containment calculations.
- Depending upon where your chemical storage area is, fire bunkers may have to be installed or alternate emergency exits and paths of travel will need to be considered.
- Since most older neighborhoods do not have the water pressure at the street to accommodate an H4 occupancy, you may have to install a fire house with a fire pump. Big dollars here.
- Is your lighting Title 22 compliant?
- Water-tolerant landscaping requirements. Yes you may have to tear out the grass.

While we agree with the draft SIA statements to the effect that costs for the upgrades likely to be required by local governments are both uncertain and difficult to predict (see page 17), we believe that the capital cost figures for APCDs used in the draft SIA should be viewed in light of the failure to include any costs reflecting the usually significant required local upgrades.

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installer/vendor and was very close to the figure of $22.62/cfm that is obtained by updating to 2017 dollars CARB's estimate for the 2008 PATCM for a 5,000 cfm system.

The SIA appropriately recognizes that the cost per cfm for a larger APCD system will likely be somewhat lower than the cost per cfm for a smaller system. There will be economies of scale in purchasing and installing a larger system. However, we believe that the step function approach and the specific figures chosen by the District to represent these economies of scale in the SIA cost analysis are too crude. The District's approach for reflecting economies of scale should be improved.

The District's step function approach generates some illogical results. If, as the SIA assumes (page 16), a system of up to 5,000 cfm costs $23/cfm and a system of between 5,000 and 10,000 cfm costs only $17/cfm, then the District would project that a 6,500 cfm system will actually cost less to purchase and install than a smaller 5,000 cfm system. (5,000 cfm x $23/cfm = $115,000 while 6,500 cfm x $17/cfm = only $110,500.) The same sort of illogical result occurs for larger systems also; the District's chosen relationship would project, for example, that a 12,000 cfm system (at $14/cfm) would cost less than a 10,000 cfm system (at $17/cfm).

The District's chosen step function approach also does not reflect what most engineers would expect to be a smooth increase in economies of scale as system size increases.

It would be better, in our view, to represent economies of scale in capital costs for APCDs with a smooth, continuous function. This could be done in either of two ways: 31-2 Cont

- Most simply, the District could assume a typical exponent of 0.7 or 0.8 to represent scale economies in the capital costs of air pollution control. Doubling the size of the system to be purchased is typically assumed in costing references (e.g., EPA's *Air Pollution Control Cost Manual*) to increase the cost of an air pollution control system not by a factor of two but instead by a factor of $2^{0.7}$ (=1.62) or $2^{0.8}$ (=1.74). If a 5,000 cfm system costs $115,000 ($23/cfm), then a 10,000 cfm system would be estimated to cost $187,000 ($18.70/cfm) using the 0.7 exponent or $200,100 ($20.10/cfm) using the 0.8 exponent.

- Alternatively, the District could perform a regression analysis to develop a relationship between system capital cost and system size in cfm, using the five (most appropriate) or seven (total, of which two are less appropriate) HEPA system cost quotes that we obtained and provided to District staff earlier this year.

Either of these approaches to representing economies of scale would provide two significant advantages over the step function approach the District uses in the Draft SIA. Either would: 1) Avoid the illogical results obtained using the District's approach; 2) Provide a smooth, continuous functional relationship that easily allows for estimating the cost of any particular sized system and reflects continually increasing economies of scale as the size of the APCD increases.

The District appears to have drawn the SIA cost estimates for systems larger than 5,000 cfm from the CARB PATCM estimates, but in our view staff have misinterpreted the CARB estimates. CARB estimated

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$17/cfm specifically for a 10,000 cfm system, not as staff assumes in the draft SIA for all systems in the range from 5,000 cfm to 10,000 cfm. A system toward the low end of this range, i.e., only slightly larger than 5,000 cfm, would have a cost substantially higher than $17/cfm. Likewise, CARB estimated $14/cfm specifically for a 20,000 cfm system, not for all systems in the range from 10,000 to 20,000 cfm. A system toward the low end of this range would have a cost much closer to $17/cfm (the CARB figure for a 10,000 cfm system) than to $14/cfm as the District has assumed for the SIA.

Finally, note that Ike Molvi, an installer/vendor with whom District staff have been in contact, estimated $23/cfm for a 5,000 cfm system and $18 - $19/cfm for a larger 20,000 cfm system.

In sum, we believe that the SIA estimate of $23/cfm in capital cost for a 5,000 cfm system is reasonable (although it still likely does not reflect the costs of local approvals necessitated by construction of the system), but that the SIA cost estimates for larger size systems are too low, reflecting too large a reduction in costs as system size increases.

Please note also that District staff appear perhaps to have made an error in the logic of their worksheet in which capital costs for APCD systems have been estimated.

SCAQMD staff provided us with a redacted copy of the worksheet used to develop the compliance cost estimates in the SIA. The worksheet is redacted in two respects: 1) Information that could reveal the identity of any particular facility has been removed; and 2) The formulas linking cells in the worksheet have been removed, leaving each cell so that it includes only a number without explanation of how that number might have been derived. The latter alteration to the worksheet makes it somewhat difficult for us to understand and to trace the analysis, but we believe in most instances that we have figured out what the formulas are likely to be in the non-redacted worksheet. We appreciate the opportunity to review this material and appreciate the effort the District staff have made in explaining this material to us. 31-2 Cont

The possible error that we are concerned with occurs in the worksheet titled "Cost Sheet for PAR 1469_StuCopy". In the first tab (High Estimate - Rev) of this worksheet, in Column D, the average tank size is multiplied by the number of tanks at the facility to get the total square footage of tanks at the facility. In column E, this total square footage at the facility is multiplied by 150 cfm/sq ft (plus 30% more for the tanks with hot, saturated air flows assumed to exist at medium anodizers) to obtain the total airflow needing APCD control at the facility. In column J, the total airflow needing APCD control is then multiplied by $23/cfm (up to 5,000 cfm) or by $17/cfm (5,001 to 10,000 cfm) or by $14/cfm (10,001 to 20,000 cfm). This procedure of totaling the cfm for all the tanks at the facility and then multiplying by the cost/cfm step function seems inappropriate. In the high cost scenario, the assumption is supposed to be that there will be one APCD system per tank needing APCD control. If so, it is not appropriate to total the cfm for all the tanks at the facility needing control and then to price a single large APCD that will provide control for that total air flow. Instead, distinct APCDs should be priced individually for the air flows for each tank needing APCD and then costs should be added across the multiple APCDs. The error lies in applying the cost/cfm figure ($23 or $17 or $14 per cfm) to the total air flow at the facility rather than to the air flow for each individual tank.

The Estimated O&M Costs of an Air Pollution Control System Should be Related to the Volume of Airflow Needing Control, Not to the Capital Costs of the System

Applying an approach used by CARB for the 2006 chromium electroplating ATCM and relying mostly on data provided by industry, the SIA applies cost figures to the effect that the annual operating and maintenance costs for an APC system will equal 18% of that system's capital costs. We believe that a better interpretation of the available data would suggest instead applying an annual O&M cost of roughly $6 per cfm or, if the District wishes to reflect some economies of scale in the estimates, perhaps $10 per cfm for smaller systems of approximately 5,000 cfm and $4 per cfm for larger systems exceeding 15,000 cfm.[3]

The table shown on the page after next summarizes the information on O&M costs for HEPA filtration APCDs that we provided to District staff earlier. We've added to the table a final column at the right that shows O&M costs as a function of the APCD system size expressed in cfm, which we believe is the best way to estimate O&M costs. This is in contrast to the CARB 2006 approach that has been adopted for the draft SIA, in which annual O&M costs are expressed as a function of APCD system capital costs. In our view, O&M costs are most directly a function of an APCD system's size measured in terms of airflow, and any observed correlation between a system's O&M costs and its capital cost is due in fact to more fundamental relationships between the system's capital cost and its size/airflow and between O&M cost and size/airflow. Why not express the relationship between system size and O&M cost directly rather than indirectly in two steps via the relationship between system size and capital cost? The District staff's approach to estimating APCD O&M costs yields the following cost/cfm estimates when the 18% of capital cost figure is combined with the staff's capital cost estimates (which we discussed earlier and suggested that they represent too much in the way of economies of scale). 31-3

O&M Costs for APCDs as a Function of System Size in cfm
Figures Resulting from SCAQMD Draft SIA Approach

APCD system size (cfm)	Capital cost/cfm	Annual O&M cost relative to capital cost	Resulting estimated O&M cost/cfm
Up to 5,000	$23	18%	$4.14
5,001 to 10,000	$17	18%	$3.06
10,001 to 20,000	$14	18%	$2.52

The estimates the District staff uses in the SIA are too low when expressed on a per cfm basis in this manner. For small APCD systems under 5,000 cfm the staff's approach results in estimated O&M costs of $4.14/cfm, in contrast to the estimate of $13.89/cfm for the only small system in our limited data set. For large systems exceeding 10,000 cfm, the staff's approach results in estimated O&M costs of $2.52/cfm in contrast to the three estimates for actual large systems that range from $3.18 - $4.10/cfm.

[3] We have no data for systems in the vicinity of 10,000 cfm and thus no recommendation specifically for them, although somewhere between the $4 and $10 per cfm figures for smaller and larger systems might seem reasonable.

Annual Operating and Maintenance Costs for APCDs for Hex Chrome Plating/Anodizing/Finishing Tanks

Unit Cost Assumptions:

Annual permit renewal (SCAQMD estimate):	$1,409 per APCD
Initial permit application (SCAQMD estimate):	$4,354 per APCD (assume average of 7 yrs after initial permit before significant changes and new permit application needed. Yrly cost thus = (initial application cost + 6*annual application cost)/7
Supervising, inspecting APCD operation:	3 hours/month/APCD (Workload estimate by one facility engineer after compliance w/PAR 1469)
Reading APCD gauges, testing, data logging:	6 hours/month/APCD (Estimate by one facility engineer for lab personnel workload after compliance w/PAR 1469)
Cost for ULPA filter:	$700
Cost for HEPA filter:	$300
	50 weeks/yr
Capital cost for HEPA + scrubbers/mesh pad APCD:	$23 per cfm
Avg engineer/supervisor/lab technician cost:	$44.84 per hr
Avg labor cost:	$22.42 per hr
Electricity Cost:	$0.18 per kW-hr (Note: seasonal and time-of-day industrial rates will end up higher than this figure. E.g., one facility pays avg of $0.17/kW-hr winter and $0.35/kW-hr in summer. This is one impt reason why these O&M costs are likely underestimated)

Facility Number	Number of APCD Systems	APCD System	Capital Cost	Airflow (cfm)	Annual Energy Cost Reported or Estimated by Facility	Filters	Replacement Schedule	Cost per yr to purchase replacement filters	Estimated Crew Hours per Changeout	Crew Cost per yr for filter replacements	Hazwaste Disposal Cost	Total Filter Cost/yr	Oversight, Testing, Data Logging, etc. Hours/yr	Oversight etc. Cost/yr	Permit cost/yr	4% of Capital Cost/yr for Property Tax, Insurance, Overhead (Source: EPA)	Total Annual O&M Cost for APCD	Annual Cost as % of Capital Cost	Annual Cost per cfm of Airflow
1	1	7 plating tanks/baths vented to scrubber, mesh pad, prefilters, HEPA + some bldg ventilation	$690,000	30,000	$48,000	30	2x/yr, 30 per changeout	$18,000	36	$3,228	$5,600	$26,828	420	$18,833	$1,830	$27,600	$123,091	18%	$4.10
2	2	2 systems serving 7 hard chrome plating tanks	$250,000	4,500	$5,371	9 prefilters 9 intermediate 9 HEPA	Prefilters quarterly Others 2x/yr Thus avg 18 per quarterly changeout	$21,600	21.6	$3,874	$8,320	$33,794	216	$9,685	$3,659	$10,000	$62,510	25%	$13.89
3	1	1 system serving 6 hard chrome plating tanks: mesh pads, prefilters, HEPA	$403,650	17,550	$12,000	9 prefilters 9 HEPA	2x/yr, 30 per changeout	$10,000	21.6	$1,937	$5,600	$17,537	?	$8,333	$1,830	$16,146	$55,846	14%	$3.18
4	1	Vent and control dichromate seal tank + building	$370,000	17,000	$5,000	28 HEPAs 10 ULPAs	HEPAs 2x/yr, ULPAs 1x/yr Thus 38 filters once, 28 next time, avg 33 at 2x/yr	$23,800	39.6	$3,551	$6,000	$33,351	108	$4,843	$1,830	$14,800	$59,824	16%	$3.52
																		Average:	$6.17
																		Weighted average:	$4.36

Costs to Meet the Enclosure Requirements are Underestimated

For our sample of facilities, we estimate higher costs to meet the enclosure requirements than the costs estimated in the SIA. We expect six sorts of costs that should be estimated in the SIA:

1. Costs to close roof vents that are within 15 feet of Tier II or III tanks. Roof vents this close to a tank must be closed. The area of any such roof vents counts toward the total square footage of building openings, and thus the closure of any such roof vents helps toward meeting the 3.5% allowance. Among the sample of 9 facilities in our cost analysis, we believe there are zero such openings within 15 feet of what will be Tier II or III tanks. (There were many within 30 feet, however.) The ceiling height of the great majority of electroplating/anodizing buildings is 20 feet or more, meaning that a vent even directly above a tank with 3-foot walls on a 2-foot platform will not be within 15 feet of the tank. We suggest that the District's cost analysis should not include roof vents in the scenario that is costed out for closing openings.

2. Costs to close additional openings as necessary to meet the 3.5% allowance. The draft SIA suggests that most facilities are already below 3.5% openings, and we agree. Among our 9 sample facilities, only two appeared currently to exceed 3.5 %. One facility would need to reduce its openings by about 140 ft^2 and the other by about 100 ft^2 in order to achieve 3.5%. One of these facilities would likely choose to install an automated 14' x 12' roll-up door to close a large bay opening at a cost of about $10,000. The other would likely cover over a window, close a large wall vent, and replace an open doorway with plastic strip curtains, at a total cost of perhaps $2,000. 31-4

3. Costs to ensure that openings on opposite sides of the building are not open simultaneously, except for a maximum of 2 hours per opening per day to allow ingress/egress of personnel and equipment. This requirement applies additionally, beyond the requirement to limit total openings to 3.5%. In our view, this means in practical terms that in any situations where there are openings of any sort on both sides of a building and/or in both the front and back walls of the building then <u>all the openings on one of the two opposing walls</u> must be fitted in some manner that keeps them generally closed, with the exception of a maximum of 2 hours/day for ingress/egress. Thus, for example, even for a building that already easily meets the 3.5% requirement, if on one side there are several open windows, a wall vent and a swamp cooler vent and on the other side there are several open doorways, then all of these items on one or the other of the two sides must be fitted in a way so that they remain generally closed, except when specifically opened for ingress/egress. Perhaps all of the open doorways on one side would be fitted with plastic strip curtains or doors that close automatically and remain closed except when being used, or perhaps the windows, wall vent and opening for the swamp cooler on the other side (none of which are used for ingress/egress of people or equipment) would be permanently closed, but one or the other of these two options would need to occur. Among our nine sample facilities, most had openings on two opposing sides of their building that are typically kept open, and some facilities had openings on all four of the opposing sides of the building. The District should estimate the costs to close a typical assortment of such openings in addition to the costs to reduce the total area of openings to meet the 3.5% requirement. A reasonable collection of such openings to assume perhaps as typical for a higher cost scenario might include two walls needing closures (one side wall, and either the front or back wall);

one wall with a small bay opening for entry and exit of equipment, an open doorway for personnel, a large window and a large wall vent, and another wall with only an open doorway and a large window or wall vent. As a representative lower cost scenario, one might assume only a single wall needing closures for an open doorway and a large window or wall vent. The costs to close these openings at typical facilities in a manner such that they could be opened when necessary would likely substantially exceed the costs the District has estimated on page 12 of the draft SIA (4 openings per facility at a cost of $200 each). While the assumption of 4 openings per facility seems perhaps reasonable as a middle cost scenario, the assumption of $200 per opening is much too low to represent the installed cost of automated roll-up doors or closing large vents and disposing of fans, housings and swamp coolers or fitting a door with an automatic closer or installing a good strip curtain arrangement in an open doorway.

4. Costs to close any openings that directly face toward and are within specified distances of sensitive receptors or schools. We did not inquire about such openings with our nine sample facilities, and thus did not estimate the costs to close them. The draft SIA also does not appear to have investigated how many openings of this sort exist and how much it might cost to close them. We understand that the District has GIS capabilities to determine how close each facility is to sensitive receptors and schools, and this would provide a start toward estimating the costs to meet this requirement.

5. Costs to address special or unusual closure situations that require structural changes in facilities. We appreciate the effort made in the SIA to recognize and account for such situations (see the two situations described at the bottom of page 12). In the first of these referenced situations, the large gaps between the wall and the roof do not necessarily have to be closed to meet the 3.5% requirement, but without closing them there will inevitably be substantial cross-drafts in the building. It would perhaps be more accurate to attribute the costs of closing these gaps to the cross-draft requirement than to the 3.5% requirement. An engineer for the facility has estimated the cost to extend the wall and join it to the roof would be about $50,000. In the other situation, as described in the SIA, the facility's managers have what they view as compelling reasons for keeping large openings at both ends of their large building open -- worker health, safety and comfort; and the logistics of moving equipment and very large parts in and out. They would prefer to meet the cross-draft requirements of PAR 1469 by extending some existing interior walls within the building to make the plating area inside the building into an enclosure rather than by closing the openings at one or the other end of the building. It may be true, as the SIA indicates, that this represents a business choice and may not be the least-cost way to meet the PAR 1469 enclosure requirements. However, if one takes a broad view on what constitutes "costs", including worker discomfort and logistical difficulties as costs in addition to construction activities, then this facility's preferred strategy to develop an enclosure within the building may well be the least-cost solution for them.

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6. Costs for additional ventilation to provide acceptable conditions for workers after the facility is closed up. Among our nine sample facilities, the managers of five of them believed that the combined impact of the closures due to the five requirements cited above would leave the building as needing more ventilation after it is closed up than would be provided assuming: 1) current levels of ventilation plus 2) the additional airflow that will be provided by the projected new APCDs for Tier III tanks. In our cost

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analysis, we attempted to quantify how much additional ventilation would be needed to meet a target of 6 air exchanges per hour within the building enclosure, and then split this additional ventilation needed into a share attributable to insufficient ventilation now and a share attributable to the additional closures due to PAR 1469. We admit that neither four of the five facility managers who thought they would need additional ventilation nor our calculations had the benefit of input or review by ventilation engineers. One of the five facilities did have a knowledgeable consulting engineer review the current facility ventilation situation relative to the PAR 1469 requirements and estimate needs and costs. In our cost analysis, we estimated that the total annualized cost for additional ventilation needed by the five facilities upon compliance with PAR 1469 would be about $14,000/year/facility.

One additional point to make about estimating the costs to meet the enclosure requirements of PAR 1469 is that these requirements apply to each enclosure within which Tier II and III hexavalent chromium tanks are located. The draft SIA equates enclosures with facilities, assuming in effect one enclosure per electroplating/anodizing facility, and scaling up the estimated unit compliance costs for a typical enclosure by multiplying by the 111 facilities affected by the enclosure requirements. Some electroplating/anodizing facilities, however, have multiple buildings or multiple enclosures within which Tier II and III tanks are located. Among our nine facilities that serve as case studies for our cost analysis for the enclosure provisions, there are 11 or perhaps 12 buildings within which Tier II and III hexavalent chromium tanks are located and there will be 12 enclosures within the meaning of PAR 1469. The SIA cost analysis for the enclosure requirements should scale up appropriately to the number of enclosures within the SCAQMD, not simply to the number of affected facilities. 31-4 Cont

The SIA Underestimates Costs for the Restrictions on Spray Rinsing of Parts

PAR 1469 would require operators when spray rinsing parts or equipment that were previously in a Tier II or Tier III hexavalent chromium tank to:

- Do so with parts fully lowered inside a tank where the overspray and all of the liquid is captured inside the tank; or

- Alternatively the operator may rinse above a tank if the tank is equipped with splash guards in good condition and the splash guards are cleaned weekly with water. 31-5

    - For a tank where installation of splash guards would restrict an overhead crane system, the operator may rinse above the tank if s/he uses a low pressure spray nozzle and the water flows off of the part or equipment and into the tank.

The SIA states that costs are estimated for these provisions by assuming that operators will comply by installing a drip tray between each electroplating or anodizing tank and adjacent tanks for facilities with automated lines. The capital cost of an installed drip tray is estimated at $310 including installation labor, and no cost is estimated for maintenance, cleaning or replacement. Several aspects of this cost estimate raise questions:

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- Despite the statement to the effect that costs are estimated only for drip trays at facilities with automated lines, the cost estimate appears to reflect one drip tray for each electrolytic tank and for each Tier III tank (305 total tanks) without regard to whether the facility has an automated line or not. The estimate thus reflecting one drip tray per electrolytic or Tier III tank appears to presume that a drip tray needs to be installed between the electrolytic/Tier III tank and an adjoining tank on only one side of these tanks, as if parts are always moved out of one of these tanks in only one direction. Movement of parts in either direction from one of these tanks would imply in most instances drip trays on both sides of the tank, not only on one side.

- The cost estimate presumes that it is feasible in all instances where there are electrolytic or Tier III tanks to install and maintain and clean drip trays, and that drip trays represent the only method that operators will elect to meet the spray rinsing requirements. The SIA does not offer any suggestions about the circumstances under which other options available under PAR 1469 such as rinsing with parts fully lowered into a tank would be chosen. When might rinsing with parts fully lowered into a tank be feasible and cost-effective? Nor does the SIA offer any suggestion about the circumstances under which it may be feasible or not feasible or cost-effective or not cost-effective to rinse above a tank with a low pressure spray nozzle with the water flowing off the parts and into the tank.

We suggest a different approach to estimating the costs to comply with the PAR 1469 spray rinsing requirements. 31-5 Cont

In April of 2018 we conducted a quick survey (supplemental to our original cost survey) of nine MFASC member-owned facilities to acquire information needed to estimate their costs to comply with these and two other specific PAR 1469 housekeeping provisions. Six of the nine facilities participating in this project at that time responded. Respondents cited several reasons why they would incur additional costs if they were to perform their spray rinsing in the manner prescribed by PAR 1469:

- At most facilities, there are few or no tanks that are empty or almost empty and into which parts can be fully lowered for rinsing that are in the same process lines and near the plating or anodizing tanks. In general, fully in-tank rinsing is not an available option for most automated lines. For hand lines, empty tanks could be found within which spray rinsing could occur, but available empty tanks are often some distance away and carrying parts to distant tanks for rinsing would substantially increase the time required for rinsing and make it difficult to return the collected plating chemicals.

- Installation of spray bars that spray rinse slightly downward while parts are raised by a hoist out of the liquid in a tank would maximize the fraction of overspray that is collected in the tank and would meet the PAR 1469 requirements. Although one of the survey facilities has such a system and finds that this system has reduced operating costs, it would be quite costly to install a spray bar system on a retrofit basis for an existing line of tanks served by an overhead crane. An ascending rinse spray bar system could be installed cost-effectively only when a tank line is being newly constructed or significantly modified.

- Most facilities thus indicated that most of their spray rinsing is done above tanks, while making an effort to ensure that overspray and drips are collected in the tanks below. The tanks above which spraying occurs have secondary containment around the base of the tanks, typically a sump below a metal grating. The sump collects any overspray or drips that aren't collected in the tanks. The material collected in the sump is usually routed to the facility's wastewater treatment system and the sump is cleaned out periodically. This approach limits the degree to which overspray or drips can result in fugitive emissions, and it is not clear that the PAR 1469 spray rinse requirements would reduce emissions to any significant degree relative to current practice.

- Several operators cited difficulties their employees face in spray rinsing above tanks in a manner that maximizes the collection of spray and drips in the tank below as PAR 1469 would appear to require. It's often not possible to access the full perimeter of a tank and spraying is thus sometimes conducted from a non-optimal location: from farther away using a higher pressure spray that carries further and provides a concentrated, well-directed spray but splashes off more; or in a direction more horizontally rather than downward; or across the short side of a rectangular tank rather than lengthwise along the tank. These time-saving practices may result in an increased portion of the overspray or drips missing the tank below and instead getting collected in the secondary containment. More material could be collected in the tank if employees spent more time and were extra-careful in their spraying. Estimates ranged from 30 – 60 minutes more per shift per employee for the workers conducting spray rinsing to do it more carefully.

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- One operator objected specifically to being required to use low pressure nozzles when spray rinsing above a tank. Many of his parts have complex geometry with crevices, hollow areas and indentations and he needs to use a high pressure spray to be sure of efficiently removing all traces of unwanted chemicals adhering to parts' surfaces. He is uncertain whether he can meet product quality specifications using only low-pressure spray rinsing. He nevertheless estimated about a half hour additional per employee involved in spray rinsing per shift if he were to spend more time and rinse more carefully using low pressure nozzles.

- Most operators felt that installation of more splash guards was not feasible for their tanks, and that spray rinsing above a tank would be by far the most frequent approach to meet the PAR requirements. Reasons given for the inability to install more splash guards included: insufficient clearance for an overhead crane/conveyor to lift racks and parts out of tanks and carry them elsewhere, and insufficient space between tanks to install splash guards. A couple of operators commented that it is difficult to access all existing splash guards in order to clean them weekly;

another reason why rinsing above tanks is the preferred approach for trying to comply with the proposed requirements rather than installing, cleaning and maintaining splash guards.

The following table summarizes the costs that we estimate the six facilities that responded to our survey will incur to meet the proposed spray rinsing requirements.

The several unit cost figures that we use in developing these cost estimates are:

- Low pressure spray nozzle and hose assembly (includes any necessary plumbing): $200 31-5 Cont
- Splash guards fully around the perimeter of a tank: $1,000
- Additional labor hours to conduct spray rinsing more carefully and as required are priced at the average hourly production worker wage rate for each facility as reported in our survey, loaded with 41% additional benefits (average for Los Angeles area). The range for the six facilities responding to this survey is from $21.19/hour to $31.49/hour. The average loaded hourly wage rate for the eleven facilities that participated in an earlier survey was $22.42/hour.

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Estimated Costs to Meet PAR 1469 Spray Rinsing Requirements

Facility	# Low Pressure Sprays Needed	# Tanks Needing Splash Guards	# Workers w/Added Workload	Add'l Time per Worker per Shift (hrs)	Capital Cost	Annual O&M Cost	Total Annualized Cost	Comments
C	3	0	5	0.5	$600	$28,072	$28,390	Now spray above/in a few empty tanks, but most is above process or rinse tanks. Most tanks are 5' deep; with parts fully out of the tanks employees must spray up to rinse top of parts -- overspray. Prohibitively costly to rinse on the rise (would require 2 employees simultaneously, 1 for crane and 1 to rinse) or to install spray bars on all necessary tanks. Have secondary containment. PAR 1469 would require: more lowering of parts into tanks for spraying, more low pressure nozzles, and painstaking care when spraying above tanks.
E	0	0	0	0	$0	$0	$0	Meets these requirements already with ascending spray rinse as racks with parts are pulled up and out of most tanks. Requires coordination between crane operator and tank personnel. Was costly to set up.
F	0	4	3	0.25	$4,000	$10,169	$11,068	Have secondary containment. Typically rinse above the tank. Sometimes rinse while rack is being moved on crane, with drip pan carried below. Assume this will be OK. A couple of tanks could use splash guards also to reduce uncaptured overspray.
G	6	0	3	1	$1,200	$16,949	$17,585	Would need to switch to low pressure nozzles and take much greater care in spraying above tanks. Have secondary containment. "Why is this necessary?"
H	10	0	10	0.5	$2,000	$26,483	$27,543	Concerned about product quality impact w/low pressure spray. Will be major problem for parts with complex geometries. Could perhaps spend much extra time w/low pressure rinse to get it close to right. Note secondary containment. Can't do splash guards because of tank/crane configurations. Don't in most cases have empty tanks in which to do spraying
I	1	0	0	0	$200	$0	$106	Use low pressure spray above tanks in most cases now already. Would be feasible in most instances (but more costly) to rinse in empty tanks or to install splash guards and clean them
				Average per facility:	$1,333	$13,612	$14,116	
						Avg for small facility:	$8,846	
						Avg for large facility:	$16,750	

Additional Costs for Source Testing and for Permitting Should be Included

Costs are estimated in the draft SIA for source testing and emissions screening only for the payments that facility owners will make to consultants and source testing contractors for performing the tests. Costs have been omitted but should be included also for the labor hours that facility personnel will expend in contracting for, arranging and supervising the tests and in recording the results and keeping records. There are often also significant costs involved in shutting down production on a line while source testing proceeds on that line, but it would be quite difficult to estimate these costs. We suggest that the SIA should assume an average of 24 hours of facility personnel labor per source test or emissions screening, with these hours priced at double the average hourly loaded rate for shop personnel of $24.42/hour to reflect the managerial and technical nature of the labor hours required for these activities.

The draft SIA is likewise incomplete in estimating the costs of the additional new and renewal permits that will be prompted by PAR 1469. The draft SIA includes the costs to be paid to the District by facility owners and operators for these permits, but fails to include an estimate of the costs of the labor hours that facility personnel will expend in seeking these permits and the costs incurred for consultants to assist in permit acquisition. These costs also should be estimated and included in the SIA. 31-6

The draft SIA assumes that one permit will be issued and renewed per each new add-on APCD system that will be installed to meet PAR 1469 requirements. We have found, however, that many facilities have had to obtain and have been issued a permit for both the APCD and for a tank or the tank line that the APCD serves. We do not understand the typical procedures applicable in these situations. We suggest that the high cost scenario in the final SIA should reflect a reasonable assumption regarding the additional numbers of tanks or tank lines that will require permits beyond the numbers of APCDs that will require permits.

Uncertainties in the Estimated Number of Tier III Tanks and Estimated Number of APCDs Needed

Costs for purchasing, installing, operating and maintaining APCDs are the largest of the several varieties of compliance costs estimated in the draft SIA. The manner in which the District estimates the number of these controls that will need to be implemented is thus key in the analysis.

As we understand it, the District does not have a census of the tanks existing at the 111 Cr(VI) electroplating/anodizing facilities and the characteristics of these tanks (e.g., Cr(VI) concentrations, operating temperatures, electrolytic and/or air sparged) as would be needed to estimate with confidence the number of tanks that will need control with add-on APCDs. Nor does the District have sufficient information about the purposes and co-location of these tanks needing new controls with each other and with existing APCD-controlled tanks as would be necessary to project confidently whether each of these newly-to-be-controlled tanks will require its own dedicated APCD or whether many of these newly-to-be-controlled tanks could be grouped together in new APCDs serving multiple tanks, or could be vented into existing APCDs. Absent this information, the District makes a several assumptions or estimates. We offer a few comments: 31-7

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- The District projects in the draft SIA that the 111 affected Cr(VI) electroplating and anodizing facilities will need to construct somewhere between 64 (low cost estimate) and 103 (high cost estimate) APCD systems to control existing tanks that will become Tier III. This ratio of new APCD systems to facilities is quite similar to what we projected – eight new APCD systems -- for our much smaller (but more thoroughly researched) sample of 10 MFASC member facilities. The District projects 0.58 – 0.93 new APCDs per facility, while we project 0.8, well within the District's range.[4] The District's overall high and low projections bracket ours; these projections appear reasonable in the aggregate.

- The draft SIA appears to suggest (page 14) that 25 of the 62 responses (among 111 facilities, assuming that none of the survey respondents are trivalent chromium only) to the District's survey provide sufficient information to judge how many Tier III tanks there will be at particular facilities and what the characteristics of these tanks are. If these 25 survey respondents are spread across all 12 of the non-trivalent facility categories that the District sets up for the draft SIA, then there are an average of only two survey respondents in each category. This rather limited coverage suggests that there is substantial uncertainty in the details of the District's characterization of the typical facility in each category as drawn from the survey responses, including: how many Tier III tanks, their average size, the number that use CFS, the number that are air sparged and could be switched to eductors, the number of stripping tanks, etc.. 31-7 Cont

We question several of the District's specific estimates that staff have derived from this limited number of survey responses:

- The District notes that there are 27 affected facilities that are controlled only by certified fume suppressants, and assumes if chemical fume suppressants are not recertified prior to 2021 that each of these facilities will need only one APCD system. We doubt that this is a good assumption. Among the set of 10 sample MFASC member-owned facilities that we studied for our cost analysis is a hard chrome facility that has two electroplating tanks that are controlled now with fume suppressants and polyballs and no APCDs. This facility would have two additional Tier III tanks (reclaim rinse) if PAR 1469 were adopted. These four tanks are in two different process lines (an automated line and a hand line) and will clearly require two APCDs if fume suppressants are not recertified. Two distinct APCDs will be required partly because these two lines are some distance apart, but more importantly because the two process lines are often run at differing times. It would be quite inefficient to connect all four of these tanks to a single APCD and to run that APCD at all times when any one of the tanks is being operated. We expect that there are additional facilities among the 27 currently controlled only by certified fume suppressants that would need more than one APCD if fume suppressants were not

[4] We did not consider in our analysis the possibility that chemical fume suppressants will not be recertified. If chemical fume suppressants were in fact not recertified by 2021, the number of new APCD systems constructed across our ten case example facilities would increase from eight to ten; giving a higher ratio of new systems to facilities than the District projects even for their high cost scenario.

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recertified. The District staff should be able to determine from permit records the number and nature of Cr(VI) electroplating and anodizing tanks at most or perhaps all of these 27 facilities and may be able to obtain information on the additional tanks that will become Tier III at some or all of these facilities. We expect that a significant number of these facilities, perhaps as many as half, will be found to have more than one tank that will need APCD control if fume suppressants are not recertified. For the cost analysis in the final SIA, the District should then apply their high cost scenario (one APCD system per tank needing APCD control) to this larger number of estimated tanks that will need APCD control if fume suppressants are not recertified. (In the low cost scenario the District assumes that fume suppressants will be recertified and that the facilities that control Cr(VI) electroplating/anodizing tanks now using fume suppressants only will use fume suppressants also to control any Tier III tanks.)

- The discussions provided in the draft SIA should be clarified as to why some tanks that might appear perhaps be Tier III have not been counted as Tier III in the analysis (e.g., "adjusted" Tier III tank count). In particular, we are interested in how many chem film, passivation and other tanks that are now air sparged have been assumed as converting to eductors and avoiding Tier III status. Among our sample of facilities, facility operators judged that only about half of these tanks could be switched to eductors without raising concerns about product quality. We are also interested in the SIA providing further details on how a determination was made regarding the fraction of stripping tanks that have Cr(VI) concentrations exceeding 1,000 ppm (thus Tier III) and the fraction that do not. If there are substantial uncertainties on these issues, perhaps they should be included among the variables for which sensitivity analysis is conducted between the low and high cost scenarios.

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- More generally, the discussion in the draft SIA about why facilities can realize savings by controlling multiple tanks with a single APCD is misleading insofar as it presents a positive case for consolidating control of multiple tanks into a single APCD (see the three points cited on page 17) without presenting also the reasons why consolidation may not be cost-effective. The potential savings from connecting multiple tanks to a single APCD can be outweighed by the costs of doing so when the tanks to be controlled:
  - Are not close to each other and connecting them would require longer duct runs; or
  - Are in different process lines which are operated on differing schedules; or
  - Generate emissions air flows that differ qualitatively (hot, saturated air flows vs. cooler, drier and less concentrated flows) and pose differing control needs that are best served by differing control technologies; or
  - Could be connected but doing so would require significant retrofit costs to integrate the new tanks to be controlled into an existing APCD system. (Note, for example, that EPA made a general assumption in costing retrofit APCD applications for the electroplating

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NESHAP regulation that retrofits cost 50% more for the same airflow controlled than entirely new, purpose-built applications.)

Also, tanks not in proximity to each other can rarely be moved closer together as the draft SIA suggests in order to vent them to a common APCD. Most tanks are located as they are because they represent components in process lines. Moving an individual tank out of its process line in order to realize a potential savings in control costs is likely not possible without upsetting various important logistical relationships particular to the process line (e.g., hoists to move parts from tank to tank along the process line, locations of drying stations).

The Sensitivity Analysis that Aims to Provide High and Low Compliance Cost Estimates is Important and Should be Expanded

The District should include more elements in differentiating a low cost scenario from a high cost scenario. The high cost scenario is not less reasonable or less likely to prevail than the low cost scenario.

We support the approach adopted in the draft SIA of estimating costs for both a lower cost scenario and a higher cost scenario, with the aim of bracketing what the PAR 1469 compliance costs are likely to be. But we suggest adding to the list of elements that have been chosen to differentiate the high cost scenario from the low cost scenario. And we disagree with the manner in which both scenarios have been characterized in the SIA: 31-7 Cont

- In our view, the high cost scenario does not represent "the highest expected cost of compliance with the requirements of PAR 1469." There are many respects in which compliance costs could prove in practice to be higher than what is estimated in the draft SIA's high cost scenario. We will list some below.

- The low cost scenario also does not represent "the costs associated with a more reasonable scenario". We view the two scenarios as approximately equally likely and reasonable – the low cost scenario is neither more likely nor more reasonable than the high cost scenario. We will list below some respects in which we believe this also to be true.

In sum, we would suggest that the District should refer neutrally and in a balanced manner to the two cost scenarios, not posing one as more reasonable or likely than the other. We would suggest that they be termed as a "higher cost scenario" and as a "lower cost scenario". The two scenarios should be viewed as representing an effort to bracket the compliance costs that will ensue from PAR 1469, with the costs actually incurred by the affected sources likely, though not necessarily, to be between the lower cost estimate and the higher cost estimate.

Some reasons why the costs that District staff estimate for the high cost scenario might be lower than the costs that ultimately prevail would include:

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- Omitted categories of costs. The District has not estimated costs for facility personnel to arrange for and supervise the additional source tests and emissions screening required by PAR 1469, nor the costs for facility personnel and consultants to pursue the additional permits that will be needed. The District has not estimated the additional operating costs that some facility owners will incur to spray rinse parts more carefully so as to capture all overspray in tanks.

- Generally underestimating some categories of costs. We believe that costs are likely to be higher than the District estimates for enclosures and for capital and O&M costs for APCDs (our particular concerns regarding APCD costs involve accounting for economies of scale and the costs for local approvals that have not been included).

- Underestimating the count of items that will need to be controlled or managed or accomplished. There will be more enclosures that will need to be created and meet the PAR 1469 requirements than there are facilities. At least some facilities that are now controlled only with fume suppressants will have more than one tank that will need APCD control if fume suppressants are not recertified. For some APCD systems, both the system and one or more of the tanks may need permits.

- The discount rate used in the analysis. There are several arguments for applying a discount rate higher than the 4% figure the District uses for the high cost scenario. Federal economic analyses, pursuant to guidance from the U.S. Office of Management and Budget, usually apply a real discount rate of 7%/yr. Many analysts believe that a hurdle rate of return approach that gives even higher figures is appropriate for establishing the discount rate to apply when compliance spending displaces productive private capital investments. 31-7 Cont

Some reasons why we don't consider the low cost scenario to be "more reasonable" or more likely to prevail than the high cost scenario include:

- No one knows whether fume suppressants actually will or will not be recertified.

- Discount rates. Choice of a discount rate as low as 1% (low cost scenario) is very rare in regulatory impact analyses, while the choice of a discount rate higher than the 4% assumed for the high cost scenario is common.

We also suggest that several additional quantities that are both important and uncertain should be added to the list of those that are varied between the lower and the higher cost scenarios. These include:

- The number of Tier III tanks needing control. The number of Tier III tanks has been estimated based on a limited number of site visits and survey responses that together cover only a small fraction of the 115 affected facilities. There is very large uncertainty in then projecting the number of facilities in each category with Tier III tanks and the average number of tanks per facility that has them. The several adjustments that are then applied to the number of Tier III tanks are further uncertain and should be subject to sensitivity analysis -- the fraction of chem film, passivation and other tanks that can (despite product quality concerns) be switched from air sparging to eductors to reduce control costs; the fraction of stripping tanks that have Cr(VI) concentrations below 1,000 ppm; whether rinse tanks can be managed to hold concentrations below 1,000 ppm, etc. Given the importance of the number of Tier III tanks in estimating compliance costs and the substantial uncertainty in estimating this number based on incomplete available data, this is perhaps the first and most important variable that should be included in a high/low sensitivity analysis. It might be appropriate also to develop also a smaller and a larger estimate of average Tier III tank size for each category. We agree that the sensitivity analysis included in the SIA currently that involves the question of how many APCDs per Tier III tank is reasonable, with high estimate of one APCD per tank and low estimate of one APCD per 2 tanks. 31-7 Cont

- In view of the seemingly substantial difference of opinion between facility operators and the SCAQMD staff about the frequency with which the enclosure requirements in total (not the 3.5% requirement alone) will prompt operators to make structural changes and ventilation improvements, this quantity also should be subject to sensitivity analysis.

The SIA's Facility-Based Impact Analysis is Key in Evaluating Whether PAR 1469 Will Be Affordable for the Affected Electroplating and Anodizing Facilities

We appreciate the District's efforts in the draft SIA to evaluate the impacts of PAR 1469 compliance costs on individual affected electroplating and anodizing facilities. In our view, particularly for small businesses (as nearly all of the entities affected by PAR 1469 are), a comparison of the annualized compliance costs a facility will face against the facility's typical annual revenues and/or profits provides a quick and rough, but very useful, indication of whether the facility can likely afford to pay the costs to comply with the proposed rule and continue in business or cannot afford to pay these costs and will likely close. 31-8

Although additional issues are also important in judging the affordability of a regulation for small businesses (e.g., whether conditions in the markets into which the affected businesses sell are such that regulatory cost increases tend to be passed through to customers), regulatory agencies often apply simple benchmarks in judging when a regulatory cost burden is likely to be problematic:

- The U.S. Occupational Safety and Health Administration (OSHA) typically views a regulatory cost exceeding 1% of revenues or 10% of profits (5% of profits for very small businesses) for the average business in an industry as a potentially significant economic impact. If projected annualized compliance costs exceed one of these levels, substantial further analysis must be conducted if a proposed regulation is to be shown to be "economically feasible" as required for regulations pursuant to the Occupational Safety and Health Act.[5]

[5] See, for example, the discussion in Section VIII E., Economic Impacts, in the preamble to the final rule for Occupational Exposure to Hexavalent Chromium. Federal Register: February 28, 2006 (Volume 71, Number 39), pages 10099-10385.

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- The U.S. Environmental Protection Agency (EPA) typically figures that a proposed regulation will not have a significant economic impact on a small entity (e.g., small business, small government) if compliance costs for the affected entity are less than 1% of that entity's sales. EPA typically figures that the impact will be "unquestionably significant" if costs exceed 3% of a small entity's sales or revenues.[6]

In contrast to the Federal OSHA and EPA, the SCAQMD has not yet established any particular benchmark levels of compliance costs relative to revenues or profits that should viewed as acceptable or unacceptable or as affordable or unaffordable or as survivable or non-survivable.

In judging the affordability of PAR 1469 for individual hexavalent chromium electroplating/anodizing facilities and for the industry more generally, we suggest that the SCAQMD might consider the following benchmarks:

- If the annualized compliance costs for the proposed rule are less than 1% of revenues, the rule is unlikely to pose affordability problems;

- If the annualized compliance costs for the proposed rule are greater than 3% of revenues, the rule is likely to pose significant affordability problems and some of the producers affected at this level are likely to close; and 31-8 Cont

- If the annualized compliance costs exceed 5% of revenues, most of the producers affected at this level are likely to close.

We suggest this set of benchmarks based on several factors:

- The chosen Federal EPA and OSHA benchmarks.

- The likelihood that hexavalent chromium electroplaters/anodizers within the SCAQMD will not be able to pass any significant share of PAR 1469 compliance costs through to their customers. Nearly all MFASC members in the District know of competitors nearby -- in Northern California, in San Diego, in Mexico, or in other States -- that won't face the PAR 1469 regulatory costs and that will take much of their business if they were to try to raise their prices by 3% or 5% or 10% to cover the PAR 1469 costs.

- The job shop electroplating industry (NAICS 332813, the industry in which the great majority of the 115 affected facilities are categorized) has had an average pre-tax profit margin over the past 27 years of less than 4%. This is a low-margin, highly competitive industry. Costs equal to 3% of profits would consume nearly all of this industry's typical profits, and costs at 5% of profits would consume more than all of typical profits.

[6] U.S. EPA. Final Guidance for EPA Rulewriters: Regulatory Flexibility Act as Amended by the Small Business Regulatory Enforcement Fairness Act. November, 2006.

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- We focus particularly on benchmarks involving a comparison between annualized compliance costs and typical annual revenues for various technical reasons. We focus on this comparison, as the District staff have provided in the draft SIA, for several reasons. First, summing all costs -- capital costs, other one-time costs, occasionally recurring costs, and annual O&M costs -- over many years into the future and then annualizing these costs provides a good, comprehensive single measure of the long-term compliance costs that a facility will bear. Second, typical annual revenues are a better representation of a firm's ability to pay costs than are typical annual profits. For small businesses, it is easier to influence the firm's reported profits in a manner that understates them and paints a misleading picture of the firm's financial health than is possible when reporting revenues. Third, the particular levels chosen for the benchmarks (e.g., 1%, 3%, 5%) should be judged based on the industry's rate of pre-tax profitability rather than post-tax profitability. In analyses that consider firms when they may be threatened with closure, tax rates are likely to be very low and compliance spending will generate little in the way of tax shields. Comparison of compliance costs against pre-tax rather than post-tax margins will provide a much more conservative analysis.

The SIA Should Do More in Portraying the Variability in PAR 1469 Compliance Cost Burden Across Affected Facilities

We are particularly concerned that the SIA estimate whether electroplating/anodizing facilities will face compliance costs that are affordable. How many of the 115 affected facilities will face costs that may force them out of business? The facility-based analysis that the District provides in the draft SIA gives information that helps in this direction, but the analysis in essence addresses only the average or typical facility in each of the 13 various categories into which the SIA divides the industry.[7] The analysis does not provide a comparison of costs to revenues for each of the 115 facilities. Specifically, the draft SIA's facility-based analysis compares the average projected compliance cost for a facility in the category against the estimated revenues for each of the individual facilities in that category and then averages the results, which are reported in Table 9 on page 32. 31-8 Cont

This is the table of draft SIA results in which we are particularly interested. It provides some sense about whether the costs to comply with PAR 1469 are affordable or not. For the large hard chrome category, which we will use as an example, the table shows for the facilities in this category that compliance costs estimated under the "low cost scenario" amount on average to 1.9% of facilities' revenues. Under the "high cost scenario", compliance costs amount instead to an average of 2.7% of large hard chrome facilities' revenues. This range of impacts shown as extending from 1.9 % to 2.7% of revenues might be interpreted by many readers as suggesting that PAR 1469 poses no significant affordability issues for large hard chrome platers in the District. The reported range of impacts is below the 3% level that EPA considers unquestionably significant, and it is below the 5% level that we believe

[7] The draft SIA establishes thirteen categories of facilities, including: chromic acid anodizing (small, medium and other); decorative chromium plating (small, medium, large and other); hard chromium plating (small, medium, large and other); multiple plating or anodizing operations (large); and trivalent (other).

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could cause closure of most of the affected producers. But this impression is misleading, we believe, because the District's analysis does not adequately show the variability of potential impacts on individual facilities around these average figures. Further analysis and scrutiny would show that many facilities in this category, as well as facilities in other categories that show similar ranges of average impacts that appear generally below affordability benchmarks, will likely have difficulty affording PAR 1469 compliance costs.

We would like the SIA to attempt to answer several specific questions. How many of the 115 affected facilities will face compliance costs from PAR 1469 that may force them out of business? How many will face annual compliance costs that exceed 5% of annual revenues, a level which we believe would clearly not be affordable for most electroplating/anodizing small businesses in the SCAQMD? How many will face annual compliance costs that exceed 3% of revenues, a level that EPA has termed "unquestionably significant" and that we believe would pose a high risk of closure for most businesses in this industry? We will provide some suggestions about how the District staff, using information they already have, might quickly perform a facility-by-facility comparison of costs to revenues that more fully portrays the range of variability in impacts and affordability and provides some answers to these questions.

For the cost portion of the cost-to-revenue comparison, the District does not develop compliance cost estimates for each of the 115 individual affected facilities nor does the District develop a compliance cost estimate for any specific one of the affected facilities. Instead, the District staff develops a cost estimate only for a typical or representative or average (not saying specifically which) facility in each of the 13 categories. 31-8 Cont

For the revenue portion of the cost-to-revenue comparison, to the contrary, the District has acquired good information (from Dun and Bradstreet) on the revenues for nearly every one of the 115 individual affected facilities.[8] But in the eventual cost-to-revenue comparisons that are presented in the draft SIA (pages 32 and 33), the District does not portray how the variation in revenues across the facilities in a category results in cost-to-revenue ratios that differ from one facility to another. Table 9 shows only the average cost-to-revenue ratio for the facilities in each category. Specifically, for example, the figure showing that high scenario compliance costs for large hard chrome facilities amount to 2.7% of their revenues is derived as follows:

- The average high scenario cost for large hard chrome facilities is estimated. This figure is $29,667/year/facility, or $30,000/year/facility as shown in Table 9 after rounding.
- This average cost per facility is compared against the revenue information for each of the 18 hard chrome large facilities. In one of the backup spreadsheets that we were given, the $29,667 high scenario average cost estimate is compared facility-by-facility against the available revenue information for that facility. The highest revenue facility among the 18 large hard chrome

[8] Based on our limited understanding of the Dun and Bradstreet data set that the District has used, we suspect that the revenue information for each of the 115 facilities may actually be for the companies or other entities that own each facility. If so, considering total corporate revenues may overstate a facility's ability to afford compliance costs in instances when the facility constitutes a separable portion of the company's overall business.

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facilities has annual revenues of $45.8 million per year, resulting in a cost-to-revenue ratio of 0.06% if it were to face the average high scenario large hard chrome facility compliance costs. The lowest revenue facility among the 18 large hard chrome facilities has annual revenues of $216,000 per year, resulting in a cost-to-revenue ratio for it, if it were to face the average high scenario large hard chrome facility compliance costs, that exceeds 14%. Five of the 18 facilities are shown in the backup spreadsheet as having cost-to-revenues ratios exceeding 3%. It would appear from the spreadsheet, and considering thus far only variability in revenues, that a substantial share of the large hard chrome category will face affordability issues, at least under the high cost scenario.

- The cost-to-revenue ratios for each of the 18 facilities in this category are then averaged, and the result is reported in Table 9 of the draft SIA only as the average figure of 2.7%.

The problem that we see with regard to the revenue side of the cost-to-revenue presentation in the draft SIA is simply that the impact of variability in facility revenues that is considered in the underlying spreadsheets is not portrayed in the SIA itself. Table 9 shows all but two of the 13 categories as having "Facility-specific ... Cost Impacts" (the title of Table 9) that are below the 3.0% benchmark. Yet the information that the District has and has analyzed on differences in revenues across facilities indicates to the contrary that nearly every category has at least one facility that likely does exceed the 3% benchmark and faces significant affordability issues. 31-8 Cont

The issue that we are concerned with on the cost side of the draft SIA's facility-based impact analysis is different from and more substantial than that on the revenue side. On the cost side, the District simply does not analyze the degree to which compliance costs vary across the facilities within a category and thus has no opportunity to reflect the impact of variable compliance costs in the facility-by-facility comparison of costs against revenues.

The compliance cost estimates the District presents in the draft SIA have been developed not for individual facilities but instead for a typical or average or representative facility in each of the 13 categories or bins. The District may believe it does not have sufficient information on the important characteristics of each individual facility (e.g., number, size and character of Tier III tanks at the facility) to estimate compliance costs for each individual facility. Instead, from the limited number of site visits and the relatively few full surveys received, the District has judged for a typical facility in each of the categories how many Tier III tanks there are and the average square footage of these tanks. The following table shows a key portion of the District's cost analysis for the high cost scenario for the most important of the 13 categories, accounting for 106 of the 115 affected facilities. (This portion of the District's cost worksheet has been reordered somewhat in order to clarify the logic and flow of the cost analysis.)

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	A	B	C	D	E	F	G
	TOTAL FACILITIES WITHIN BIN	% OF FACILITIES IN BIN WITH TIER III TANKS	# OF FACILITIES IN BIN WITH TIER III TANKS	ADJUSTED # OF TIER III TANKS PER FACILITY AT FACILITIES THAT HAVE THEM	TIER III TANKS NEEDING APCD CONTROL	AVERAGE TIER III TANK SIZE (SQ FT)	TOTAL SIZE OF TIER II TANKS AT A FACILITY (SQ FT)
ANODIZING Medium	18	83%	15	3.5	49	24.4	85.4
ANODIZING Small	14	80%	11	2	22	31	62
DECORATIVE Medium	11	25%	3	2	3	47	94
DECORATIVE Small	27	50%	14	1.3	8*	19.375	25.1875
HARD Large	18	50%	9	1.8	17	22.5	40.5
HARD Medium	7	43%	3	1	3	2.5	2.5
HARD Small	6	0%	0	N/A	0	N/A	0
DECORATIVE Large	5	0%	0	N/A	0	N/A	0

Referring, for example, to the Hard Chrome Large category, the District estimates that there are 18 such facilities that will be affected by PAR 1469, that half of them (9) have Tier III tanks, and that there are an average of 1.8 tanks per hard chrome large facility, for a total of 17 tanks in this category. The District further estimates based on site visits and survey results that the average size of a Tier III tank at hard chrome large facilities is 22.5 square feet. When multiplied by the estimated average of 1.8 Tier III tanks at large hard chrome facilities that have them, the District estimates that the average such facility has 40.5 square feet of Tier III tank surface area that will need to be controlled with APCDs. The cost analysis then proceeds beyond what is shown in the table above. The District assumes that the APCD to control a Tier III tank should be sized at 150 cfm/sq ft, assumes in the high cost scenario that there will be one APCD system per Tier III tank, and applies unit cost functions to the estimated air flow needing control to estimate both the capital and annual O&M costs for the APCD systems needed to control the Tier III tanks that are thought to exist among the estimated 18 hard chrome large facilities. The District follows a similar procedure in estimating the other sorts of compliance costs that PAR 1469 will entail for the facilities in this category, including costs for enclosures, source testing, permitting, etc. For each sort of cost, the District ultimately estimates the cost for the average facility in this category and the total cost for the entire set of facilities in this category. The total estimated high scenario compliance cost for the estimated 18 large hard chrome facilities is $534,000/year (page 8), eighteen times the cost of $29,642/yr that has been estimated for the average large hard chrome facility.[9] In the facility cost-to-revenue analysis as shown in the worksheet (though not in the SIA document itself), the District compares the $29,642/yr estimated average high scenario cost and the $21,542/yr estimated average low scenario cost for a large hard chrome facility sequentially against the annual revenue estimates for each of the 18 large hard chrome facilities.

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The high scenario and the low scenario compliance cost estimates for the average large hard chrome facility are computed based on that facility having exactly 17/18 or 0.944 Tier III tanks that need APCD control. In reality, though, some of the 18 large hard chrome facilities have no Tier III tanks (the District estimates that 9 of the 18 have no Tier III tanks), some have one Tier III tank, some likely have two, and perhaps a few have three or more Tier III tanks. The number of Tier III tanks that a facility has and that will need to be controlled with APCDs appears clearly to be the most important single factor that will

[9] The total and the average differ by a factor of 18.01, not exactly 18. The total figure is taken from the SIA itself while the average figure is taken from the backup worksheets we were provided. The small difference from the factor of 18 that is expected is perhaps due to rounding.

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determine the facility's PAR 1469 compliance costs.[10] The more Tier III tanks a facility has, the higher the facility's compliance costs will be, in a roughly linear relationship. The number of Tier III tanks a facility has is likewise the most important factor that determines how one facility's compliance costs will differ from those for the other facilities in the same category. In our view, the key to reflecting variability in compliance costs across facilities in the SIA's facility-specific impact analysis lies in reflecting in the cost analysis the variability across facilities in the numbers of Tier III tanks that will need APCD controls. We will demonstrate one way in which the SIA's cost analysis could be expanded to reflect this variability, using as an example again the cost analysis for the high cost scenario for the large hard chrome category of facilities. 31-8 Con't

The District estimates in the draft SIA that there are 18 large hard chrome facilities, nine of which have no Tier III tanks and the other nine of which have 17 (adjusted) Tier III tanks that will need a total of 17 APCD systems (one system per Tier III tank in the high cost scenario). How might these 17 tanks/systems be distributed across the 18 large hard chrome facilities and what compliance costs might each of these facilities then face based on the number of tanks/systems each has?

We use a binomial expansion procedure to estimate the probability that any one of the eighteen facilities has various numbers of the Tier III tanks.[11]

[10] The SIA notes at the top of page 6 that the majority of the estimated PAR 1469 compliance costs are attributable to the capital, installation and O&M costs of controls for APC systems. The costs for APC systems relate directly to the number of Tier III tanks being controlled by these systems, figured at one system per tank (high cost scenario) or two systems per tank (low cost scenario), including costs for source testing and permitting. Table 2 on page 7 of the SIA demonstrates the importance of the number of Tier III tanks in determining PAR 1469 compliance costs. The costs for most of the largest PAR 1469 requirement categories (the rows in the table) are essentially linear with respect to the number of Tier III tanks, including the following six requirement categories: capital cost of new APC systems for existing Tier III tanks; initial source testing for new APC systems for existing Tier III tanks; permitting costs for new APC systems for existing Tier III tanks; screening test costs for Tier III tanks; operating and maintenance costs for APC systems; and annual permit renewal costs for Tier III tanks. In the low cost scenario (third of the four numerical columns in the table), these six requirement categories that relate directly to the number of Tier III tanks account for $1,957,000/yr or 74% of the $2,648,000/yr in total annual costs for the low cost scenario. For the high cost scenario, the costs for these six requirements account for $3,265,000/yr or 82% of the $3,977,000/yr in total annual costs (excluding from the total the amounts totaling $281,000 for existing electrolytic tanks controlled by chemical fume suppressants).

[11] We simulate the location of the 17 tanks across the 18 facilities as a set of 17 independent Bernoulli trials. A tank is, in concept, dropped randomly into one of the 18 facilities, with probability 1/18 (0.0555) that the tank ends up in any given facility. The binomial expansion (function available in Excel) then gives the probability that any number of tanks ends up at the given facility after all 17 tanks are placed or after all 17 trials are completed.

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Bernoulli trials table, 17 trials, 0.05555 probability of "success" in each trial

# of "successes"	Probability of this # of successes	Probability of this # of successes or more
0	0.3785	1.0000
1	0.3784	0.6215
2	0.1781	0.2431
3	0.0524	0.0650
4	0.0108	0.0126
5	0.0016	0.0019
6	0.0002	0.0002
7	0.0000	0.0000
8	0.0000	0.0000
9	0.0000	0.0000

This table can be read to say, for example, that any one of the 18 large hard chrome facilities has a probability of 0.065 of having 3 or more tanks. The most likely numbers of tanks at any single one of these nine facilities is zero or one, with each of these numbers of tanks having a probability of 0.378 at any given facility. This Bernoulli procedure simulates the likely variability in numbers of Tier III tanks at the large hard chrome facilities, and we next simulate the likely variability in compliance costs across the large hard chrome facilities by attaching an estimate of the likely compliance cost per tank to the estimates for the numbers of tanks.

The compliance cost estimates that District staff have developed in the draft SIA show, for the high cost scenario, that roughly 82% of the annual compliance costs for a facility relate linearly to the number of Tier III tanks the facility has (see footnote 8, above). For large hard chrome facilities that will face an average compliance cost that the draft SIA estimates at $29,642/yr, then, 82% of this cost or $24,306 relates directly to the number of Tier III tanks the facility has, and approximately 18% of this amount, or $5,336 appears to relate to other factors. The average large hard chrome facility for which these cost estimates were developed has 17/18 (0.9444) Tier III tanks (17 Tier III tanks across 18 large hard chrome facilities). The compliance cost per tank, as the draft SIA estimates it, is thus $24,306/0.9444 or $25,736. A mathematical function stating how the District's high scenario cost estimate for large hard chrome facilities relates to the number of Tier III tanks that one of these facilities has would thus be: 31-8 Cont

High scenario compliance cost at large hard chrome facility = $5,336/yr + ($25,736/yr) x (# Tier III tanks)

We apply this cost function to simulate how the compliance cost a large hard chrome facility will bear relates to the number of Tier III tanks it has, and we combine this cost function with the Bernoulli estimates for how the number of tanks a facility has is likely to vary across the 18 large hard chrome facilities.

The table below takes this analysis a step further, by combining information on the variability of revenues across the 18 large hard chrome facilities with this information we have developed on the variability of costs across these facilities. The table estimates the probability that a random facility among the 18 will have annual compliance costs exceeding 3% of that facility's annual revenues.

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Number and % of Large Hard Chrome Facilities With Compliance Costs Exceeding 3% of Revenues
High Cost Scenario

Revenues for Hard (Large) Facilities	Probability of this revenue level	Annual Cost if at 3% of Revenues	Minimum # of tanks req'd to yield this cost	Minimum # of tanks req'd to yield this cost	Probability of this # of tanks or more for this facility	Joint probability
$45,845,045	0.0556	$1,375,351	53.23	54	0	0.0000
$7,736,964	0.0556	$232,109	8.81	9	0.0000	0.0000
$6,863,936	0.0556	$205,918	7.79	8	0.0000	0.0000
$4,511,352	0.0556	$135,341	5.05	6	0.0002	0.0000
$4,210,246	0.0556	$126,307	4.70	5	0.0019	0.0001
$3,851,839	0.0556	$115,555	4.28	5	0.0019	0.0001
$3,271,441	0.0556	$98,143	3.61	4	0.0126	0.0007
$3,531,073	0.0556	$105,932	3.91	4	0.0126	0.0007
$3,202,736	0.0556	$96,082	3.53	4	0.0126	0.0007
$2,000,000	0.0556	$60,000	2.12	3	0.0650	0.0036
$1,774,633	0.0556	$53,239	1.86	2	0.2431	0.0135
$1,412,912	0.0556	$42,387	1.44	2	0.2431	0.0135
$896,802	0.0556	$26,904	0.84	1	0.6215	0.0345
$775,000	0.0556	$23,250	0.70	1	0.6215	0.0345
$700,000	0.0556	$21,000	0.61	1	0.6215	0.0345
$511,726	0.0556	$15,352	0.39	1	0.6215	0.0345
$500,000	0.0556	$15,000	0.38	1	0.6215	0.0345
$216,278	0.0556	$6,488	0.04	1	0.6215	0.0345
					Summed probability:	0.2401
					Expected # Facilities:	4.3222
					Percent of Facilities:	24.0%

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The first column of this table shows the annual revenues that the District has estimated for each of the 18 large hard chrome facilities. The second column assigns an equal probability (1/18 = 0.0556) to each of the 18 revenue estimates for large hard chrome facilities. In the third column, we show what the annual compliance cost would need to be for each of the 18 facilities if costs were to exceed 3% of facility revenues (e.g., for the bottom-most facility in the list with annual revenues of $216,278, compliance costs would need to exceed $6,448/year if they were to exceed 3% of revenues for this facility). In the fourth column, we show how many Tier III tanks would need to be at a facility in order for the facility's compliance cost to exceed the cost figure shown in the third column and exceed 3% of revenues. The number of tanks shown in the fourth column has been computed by using the cost formula cited earlier:

High scenario compliance cost at large hard chrome facility = $5,336/yr + ($25,736/yr) x (# Tier III tanks)

The fifth column rounds up the number of Tier III tanks cited in the fourth column to the nearest integer. (An actual facility cannot have a fraction of a tank.) The sixth column shows the results of the Bernoulli trials and binomial expansion: the probability that a facility has a number of tanks equal to or exceeding the number in the fifth column. The sixth column shows the joint probability of the facility having both

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the revenue figure shown in the first column and a number of tanks equal to or exceeding the number that would cause compliance costs to exceed three percent of this revenue figure.

At the bottom of the sixth column are the results of this analysis for the high cost scenario for the 18 large hard chrome facilities:

- The joint probability that a facility has the revenue figure shown in the first column and a number of tanks sufficient to cause compliance costs to exceed 3% of these revenues is 0.24.
- The expected number of the 18 large hard chrome facilities that will have compliance costs that exceed 3% of their revenues is thus 0.24 x 18 = 4.32.
- The expected value of 4.32 facilities incurring compliance costs that exceed 3% of revenues represents 24% of the 18 large hard chrome facilities.

In other words, taking account of the variation among large hard chrome facilities in revenues and compliance costs, we estimate using the estimates in the draft SIA that 24% of the 18 facilities are likely to incur compliance costs (high cost scenario) that exceed 3% of their revenues. In our view, any facility for which long-term compliance costs exceed 3% of the facility's revenues would have its continuation in business threatened.

We performed this analysis also for large hard chrome facilities to estimate the number and percentage of the 18 facilities that would have costs exceeding 5% of revenues (likely resulting in closure of these facilities), and performed these calculations for both the District's high cost scenario and for the low cost scenario. The results are shown in the table below. 31-8 Cont

Potential Closures Among Large Hard Chrome Facilities Due to PAR 1469 After Consideration of Variability Across Facilities in Revenues and Compliance Costs

	High Cost Scenario	Low Cost Scenario
Percentage of facilities with costs > 3% of revenues – threatened closures	24%	17%
Percentage of facilities with costs > 5% of revenues – likely closures	15%	9%

We suggest that the District should perform analyses similar to this one for the additional categories of facilities in order to estimate the numbers of facilities facing compliance costs exceeding affordability thresholds after considering the variability of revenues and costs. We expect this analysis would show that PAR 1469 would likely lead to the closure of some 10 – 20% of the Cr(VI) electroplating/anodizing industry in the SCAQMD.

We are particularly concerned that the District should perform this sort of analysis as a part of the SIA for the small decorative chrome category of facilities, which includes all or nearly all of the facilities that are now controlled with chemical fume suppressants (CFS) only. Our preliminary calculations show that the PAR 1469 low scenario compliance costs would cause the closure of more than one-third of these

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small facilities even if CFS were to be recertified. If CFS are not recertified, then the high scenario compliance costs would be sufficient to cause the closure of roughly 60% of the facilities in this category. We believe it is very important for the District in the SIA to complete a thorough analysis of the degree to which small decorative chrome facilities will be able to afford compliance with PAR 1469. We believe this analysis would show that without financial assistance from the State and/or District that PAR 1469 would cause the closure of between 35 and 60 % of these facilities. 31-8 Con't

District Staff Should Seek Funding to Assist With Capital Costs for Add-on APCDs in Any Event, Not Only if Non-PFOS Fume Suppressants Are Not Recertified

The draft SIA presents cost estimates in terms of the average annual costs the industry will face each year through 2035. In reality, though, each of the businesses in the industry must get over the hump of the initial capital costs and "first year" costs of the regulation in order to have an opportunity to try to continue in business until 2035. The draft SIA projects these initial costs as $100,000 to $150,000 for the average facility,[12] and as several hundred thousand dollars for many individual facilities. How is the typical electroplating or anodizing small business going to come up with several hundred thousand dollars to meet this particular set of environmental requirements and then see if it can continue in business for the long haul? Virtually none of the affected businesses are publicly owned -- almost none of them can issue stock or bonds or has a parent company that can do so. Most of them are family-owned. Many of them can't access a bank loan for several hundred thousand dollars, and their owners are unlikely to have the personal assets available to pay this amount.

Furthermore, who is going to invest this sort of money or what bank is going to loan this sort of money for a business with: a) thin profit margins in the first place; b) an ever-shrinking base of manufacturing customers in the South Coast area; and c) the inevitable prospect of additional costly regulatory requirements in the future? In addition to Rule 1469 there will be Rule 1426 on additional metals beyond hexavalent chromium; Rule 1480 on monitoring; community air toxics programs; tighter wastewater requirements; increasing fees for all sorts of permits; tighter building codes; emergency planning requirements; training, certification and paperwork requirements; and so forth. Who is going to help the South Coast electroplaters and anodizers get over the hump of the initial costs for Rule 1469 when the future looks like this? 31-9

The final SIA should include an analysis that more clearly identifies the initial capital costs of PAR 1469 and applies simple credit-worthiness tests to determine whether the affected facilities can finance these costs. The adoption resolution for PAR 1469 should commit District staff to seek funding for assistance with capital investments for add-on APCD controls in any event for this industry, not solely if non-PFOS chemical fume suppressants cannot be recertified. Perhaps the financial assistance could be targeted for facilities that are projected to face compliance costs that exceed a specified percentage of their typical revenues, as calculated using the District staff's procedures for estimating costs and revenues.

[12] See Table 2, page 7. The summed "one-time costs" in the high cost scenario total approximately $17 million, which when spread across the 115 affected facilities equals nearly $150,000 for the average facility. The projected costs in the low-cost scenario are about 2/3 of those projected for the high cost scenario.

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Responses to Metal Finishing Association of Southern California (MFASC) Comment Letter regarding the Socioeconomic Impact Assessment for PAR 1469, submitted via email 8/23/18 by Environomics

SCAQMD staff worked extensively with MFASC and their consultant Environomics to ensure that the RDSIA closely represents actual cost impacts associated with PAR 1469. Based on a detailed review of MFASC's comments and follow-up conversation with Environomics, SCAQMD staff concluded that:

- MFASC overestimated the overall compliance cost of PAR 1469 by more than $2,000,000 annually as a result of overly conservative assumptions about the proposed rule requirements.
- The MFASC overestimated costs based on assumptions for building enclosures and spray rinse requirements but did not provide enough information to substantiate the cost estimates. Without information to substantiate the cost, the SCAQMD staff cannot determine if the costs include modifications or installation of equipment that goes above the requirements of PAR 1469.
- MFASC's cost estimates are based on a limited subset of facilities (i.e., ten member facilities) that were extrapolated to all affected sources as opposed to data used in SCAQMD's RDSIA which are based on costs from more than 62 facility surveys and over 50 site visits.
- The subset of facilities used for MFASC's cost estimates is not representative of the entire PAR 1469 facility universe.

Further, SCAQMD staff reached out to Environomics to ask for data to verify the cost assumptions presented in MFASC's cost analysis, however, despite repeated requests the data was not provided. In addition, SCAQMD staff presented detailed cost assumptions at Working Group Meeting #9 on January 4, 2018. SCAQMD released the Draft Socioeconomic Impact Analysis on Friday, July 13, 2018 for public review. SCAQMD staff has provided detailed responses to MFASC's comments below.

31-1 Response: SCAQMD staff have worked with Environomics and members of the MFASC to recognize costs associated with PAR 1469 as accurately as possible. Numerous calls and emails were exchanged between staff and representatives of MFASC and/or Environomics to discuss cost assumptions as well as work in progress. In addition, cost assumptions and unit costs were discussed at several working group meetings, and cost-related comments were incorporated into the socioeconomic analysis as appropriate. It is important to note the cost estimates to control Tier III Tanks that are currently uncontrolled, as calculated in the Revised Draft Socioeconomic Impact Assessment (RDSIA) correlate well with the Environomics estimate, in spite of the limited sample size used by Environomics to calculate costs. Therefore, the estimate agrees with the RDSIA for the costs to control Tier III Tanks that MFASC representatives have publicly acknowledged should be controlled.

The comment letter overestimates costs that are directly imposed by PAR 1469 for building enclosures and spray rinsing, as discussed in more detail in Responses to Comments 31-4 and 31-5, respectively. This overestimation amounts to more than $2,000,000 in annualized costs. Removing these overestimated costs for building enclosures and spray rinsing results in an annualized estimate that is very close to the high estimate calculated in the RDSIA.

The comments appear to be based on outdated assumptions from rule requirements that have changed, particularly with regard to the cost estimates for building enclosure costs. In addition, many of the assumptions in the comment letter are based on a very small sample size that are extrapolated to the entire universe of PAR 1469 facilities. For example, the cost estimate for spray rinsing is based on six facilities; costs averaged for these facilities and used for all facilities subject to PAR 1469. In addition to the sample size being very small, there is no assurance that the sample is representative of the PAR 1469 facility universe.

In contrast, cost estimates calculated in the RDSIA are based on a survey sent to all PAR 1469 facilities with a response rate of over 50%, site visits to more than 50 facilities, 13 Working Group meetings where potential rule requirements were discussed in detail, and numerous discussions with representatives from the MFASC that focused specifically on minimizing cost impacts to chrome plating and chromic acid anodizing facilities. Staff worked to develop proposed rule requirements that minimize costs without compromising control of hexavalent chromium. In many cases, several options are allowed to provide flexibility for owners and operators. These optional requirements are a direct result of working with the MFASC and industry stakeholders to explore ways of providing flexibility and limiting costs.

The RDSIA makes conservative cost assumptions and likely overestimates actual costs, particularly under the high-cost scenario. The reason is that costs for compliance with PAR 1469 are driven by the number of new air pollution control (APC) systems assumed to be necessary for existing Tier III Tanks. Approximately 75% of the cost estimated in the RDSIA is attributed to new APC systems. The number of APC systems is directly related to capital costs, operating and maintenance (O&M) costs for the APC systems, permitting and source testing costs. The number of Tier III Tanks is likely overestimated in both the low-cost scenario and the high-cost scenario, for the following reasons:

- The number of Tier III Tanks in the RDSIA include tanks that may be Tier II Tanks if they are operated within the temperature and tank bath concentrations defined in PAR 1469 Appendix 10. PAR 1469 allows Tier II Tanks to be controlled using much less expensive methods than Tier III Tanks. For example, a tank cover or Merlin hood is far less expensive than the capital cost of an APC system, and there are no costs associated with O&M, permitting, annual permit fees, source testing or emissions screening.

- Many of the stripping and electropolishing tanks that are currently assumed to be Tier III Tanks in the RDSIA may not even be considered a Tier I Tank and would not be regulated under PAR 1469 if the tank bath is operated at a hexavalent chromium concentration below 1,000 ppm. A facility owner/operator may choose to operate a stripping or electropolishing tank below 1,000 ppm through several methods including converting to a chemical stripping process or changing the tank bath frequently enough to ensure the concentration stays below 1,000 ppm.
- Under the high-cost scenario, 27 APCs are assumed to be installed at decorative plating facilities. However, if non-PFOS chemical fume suppressants are not certified, staff will work with CARB to identify a low-cost compliance option that is as equally effective as chemical fume suppressants and seek funding to assist facilities in installation of pollution controls or use of non-toxic alternatives. This low-cost compliance option is expected to be less expensive than a HEPA-controlled APC system. It is not possible at this time to speculate on the configuration of the low-cost option; however if it does not involve add-on pollution controls, O&M costs, permitting and source testing costs would be eliminated. The current estimate of up to 27 APCs under the high cost scenario may be eliminated.
- Under the high-cost scenario, the RDSIA assumes that most tanks will require an APC system sized to control emissions from that individual tank. This is a conservative assumption as staff believes there are many opportunities for a plating or anodizing facility to realize savings by venting multiple tanks to a common APC system, moving tanks that are not currently located in proximity to each other and venting to a common APC system or venting an existing tank required to be controlled under PAR 1469 into an existing APC system, where capacity of that system allows.

Staff cannot estimate the number of APCs associated with Tier III Tanks that may be reduced under the first two bullets above, as any estimate would be speculative. Therefore, the RDSIA conservatively assumed all those tanks would require installation of APC systems. These changes are associated with facility business decisions and many factors influence whether a facility owner or operator may decide to change a current tank or plating/anodizing process instead of installing an APC system under PAR 1469.

SCAQMD staff is unable to verify costs presented in the comment letter, in spite of repeated requests from staff to provide the name of the specific facility for which costs were calculated. Therefore, staff has no means to verify and compare PAR 1469 requirements and resulting costs calculated in the RDSIA with costs calculated by Environomics.

Regarding the bullets points under Summary of Comments on page 2 of the comment letter, please see Responses to Comments 31-2 through 31-9.

31-2 Response: The use of distinct unit costs for air pollution control (APC) system sizes of 5,000 cubic feet per minute (cfm), 10,000 cfm and 20,000 cfm was due to the fact that the stated unit costs are correlated with those specific sizes. With regard to the analysis in the RDSIA, it should be noted that no APC systems are expected to be larger than 14,100 cfm (i.e. low estimate for Decorative – Medium facility category). In order to be cost conservative, a unit cost of $17 cfm was applied to the APC systems serving new Tier III Tanks within that facility category. A unit cost of $14/cfm, corresponding to an APC system size of 20,000 cfm is not used in the RDSIA analysis.

Regarding the cost of local approvals, the RDSIA acknowledges that the costs estimated do not include local approvals due to the uncertain and variable nature of these approvals. Cost estimates do not include costs that the city or municipality may impose for building inspections, approvals and upgrades to meet local building codes for the facility. For example, a facility may need to meet the current building code or seismic requirements. No costs were assumed for items such as building inspections, approvals, and upgrades imposed by the city or municipality. Each city or municipality may have different requirements relative to installation of APC systems, and staff cannot reasonably predict these costs.

The MFASC accurately states that the facility-aggregated ventilation rate was multiplied by the unit cost to develop the average facility cost for APC controls at all facilities with Tier III Tanks within a particular category. For the high cost estimate, the unit cost for all facility category was $23/cfm, except for two category where the average APC system size was expected to be above 5,000 cfm. In those cases, $17/cfm was used. The total facility cost for APC systems is the same whether the total aggregated flow rate is used or an average size system is costed out individually and then summed to get the total facility cost.

The low-cost scenario used an assumption of two tanks per APC system for the average facility within a particular category. In most cases, this assumption results in one assumed APC system at the average facility with Tier III Tanks within that category. The appropriate unit cost (either $17/cfm or $23/cfm), depending on the average system size was then multiplied by the facility-aggregated ventilation rate to calculate the total cost.

While the suggestion of applying a smoothing function between the unit costs that were obtained for discrete size APC systems may be useful in certain situations, staff believes that it may infer a higher level of precision than is appropriate for this analysis, since average facility costs were assumed for each facility category. Staff believes grouping or categorizing of facilities, and applying the known unit cost data is the appropriate way of characterizing the survey data and this was the approach used in the RDSIA.

31-3 Response: The approach used in the RDSIA to calculate annual operating and maintenance (O&M) cost as a percentage of capital cost is appropriate and conservative for the following reasons:

1. This approach was used in 2006 revision to the CARB Air Toxics Control Measure (ATCM) for chrome plating. It has been modified to reflect the survey results as submitted by Environomics.
2. The RDSIA calculates a separate line item for electrical power to drive the ventilation blower. Since electrical power is considered an O&M cost, the actual percentage of O&M as calculated in the RDSIA is higher than 18% as a percentage of the capital cost.
3. The approach is directly correlated to system cfm through the cost calculation methodology, since the facility-aggregated ventilation flow rate (in cfm) is multiplied by the appropriate system-sized unit cost. Please also see Response to Comment 31-2.
4. One of the largest cost components of annual O&M costs is replacement of HEPA filters. The Environomics data indicates a HEPA filter change frequency of twice per year. This filter change frequency is not consistent with the discussions staff had with facility operators in over 50 site visits during rule development of PAR 1469. Many facilities reported that HEPA filters may last considerably longer than one year, depending on flow rate and particulate loading. Therefore, calculating O&M based on a frequency of twice per year for a HEPA filter change likely overestimates O&M costs in the comment letter.

As noted in Response to Comment 31-2, a unit cost of $14/cfm, corresponding to an APC system size of 20,000 cfm is not used in the RDSIA analysis.

31-4 Response: Individual responses to the six types of costs suggested by the MFASC are given below:

1. The RDSIA conservatively assumed some roof vents might need to be closed based on all 111 affected facilities, not just the nine facilities used in the comment letter.

2. From site visits to more than 50 facilities subject to PAR 1469, staff has observed that nearly all facilities currently have existing doors or windows installed in enclosure openings. The RDSIA recognizes additional costs at approximately 10% of facilities that may need to spend additional money to enclose an existing building that may not meet the building enclosure opening limitation of 3.5% of the building envelope. Both of the examples cited are within the cost estimates assumed in the RDSIA.
3. The statement that *"all the openings on one of the two opposing walls must be fitted in some manner that keeps them generally closed…"* is not accurate. In addition to closing one or both sides of a building enclosure, PAR 1469 subparagraph (e)(2)(B) allows an owner/operator to *"Utilize a barrier, such as large piece of equipment that restricts air from moving through the building enclosure."* This is one example of an optional rule requirement that arose from discussions with industry stakeholders to provide flexibility under the rule for owner/operators in an effort to minimize cost. While this requirement does exist independent of the 3.5% limitation, PAR 1469 provides sufficient flexibility to meet the building enclosure opening, while allowing openings on opposite walls to remain open in certain situations.
4. As previously stated, from site visits to more than 50 facilities subject to PAR 1469, staff observed that nearly all facilities currently have existing doors or windows installed in enclosure openings. Therefore, no additional cost is expected to be incurred by facility operators closing doors that directly face the nearest sensitive receptor, excluding schools, and nearest school within the distances prescribed in PAR 1469.
5. As previously stated, the RDSIA recognizes additional costs at approximately 10% of facilities that may need to spend additional money to enclose an existing building that may not meet the building enclosure opening limitation of 3.5% of the building envelope. Regarding the situation described in the comment where a facility operator elects not to close one end of a large building due to equipment access considerations but instead to construct a more expensive enclosure around the plating operation within the larger facility, the socioeconomic analysis typically only includes the costs that are directly related to PAR 1469 requirements. In the example in the comment letter, the RDSIA did not recognize the costs of a business decision that may result in higher costs than those that are the direct result of the requirements of PAR 1469, as those are speculative.
6. Regarding proper ventilation, previous comments submitted by MFASC and other commenters dealt specifically with closing of roof vents. Earlier versions of PAR 1469 proposed to require closure of all roof vents. SCAQMD staff worked with industry stakeholders to limit this requirement to roof vents located within 15 feet of a Tier II or Tier III Tank. In subsequent discussions with industry representatives, the issue of proper ventilation air exchange rate was no longer identified as

an issue. Staff believes that PAR 1469 provides sufficient flexibility to allow for proper ventilation without added costs.

Staff acknowledges that there may be more than one building enclosure at a facility. However, not all enclosure may house a Tier II or Tier III Tank. Based on staff's observations during facility site visits, a reasonable assumption of one enclosure housing a Tier II or Tier III Tank per facility was used.

31-5 Response: The comment accurately states that costs were assumed for drip trays at all Tier III and electrolytic tanks irrespective of whether the tank was part of a line with an automated hoist, in order to be conservative. The assumption of one drip tray per tank further assumes that drip trays will be sized to span between tanks in close proximity to each other, as many small plating shops are configured. During facility site visits, staff found that chromium plating and chromic acid anodizing lines have a well-defined direction of travel during operations. These observations validate the assumption of one drip tray per tank.

The RDSIA's assumption does not mean that staff presumed the only feasible compliance method was the use of drip trays or that they represent the only method that operators will choose to meet the spray rinsing requirements. The cost estimates assume that most facilities will choose the lowest-cost option that works for their configuration. It is assumed that the lowest cost option will probably be drip trays in most cases. However, PAR 1469 also allows for rinsing above the tank with low-pressure spray nozzles, as well as rinsing above the tank with high pressure spray nozzles provided the tank is shrouded by splash guards. Costs are provided for other scenarios as well as drip trays.

The MFASC relies on the six facilities that provided a survey response to develop assumptions for all facilities in the PAR 1469 universe. However, more than half of the facilities in the PAR 1469 universe include one or more rinse tanks within the plating or anodizing line, eliminating or greatly reducing the need for spray rinsing. This leaves a minority of facilities where it may be necessary to conduct spray rinsing at all. Furthermore, discussions with industry stakeholders have focused on compressed air drying of parts after rinsing, and changes to the proposed rule requirements were made to accommodate the preferred industry practice.

31-6 Response: The RDSIA did not include personnel labor costs as suggested, or the cost to shut down production during a source test as the amount of these costs are speculative and not typically recognized in a socioeconomic assessment.

Regarding the cost of preparing a permit application, SCAQMD permitting staff is available to consult with facility operators on the elements necessary to submit a complete permit application. In general, this includes the application paperwork as well as the specifications for the control equipment. Based on discussions with contractors, the unit cost quoted is for a comprehensive suite of services from the contractor, from design through installation of the APC equipment and no additional cost for these elements is estimated in the RDSIA. Therefore, staff believes the cost to the facility operator to submit the permit application has been considered in the RDSIA.

A clarification has been added to the final staff report that SCAQMD staff will make an effort to minimize costs by consolidating equipment listed in the permits.

31-7 Response: The RDSIA based assumptions for Tier III tank estimates from compliance-staff site surveys and facility-completed written surveys and information was obtained to compile a reasonably representative number of facilities across most of the non-trivalent facility categories. Apportioning tank counts uniformly across the 12 non-trivalent facility categories does not yield an accurate distribution of presumed APC system installations, and would likely skew high in cost-revenue ratios for facility categories not subject to the APC add-on requirement and corresponding costs.

For facility categories with reported Tier III Tanks provided in either compliance-staff site surveys or facility-submitted written survey responses, the response rate was nearly 52%. When weighting the response rate by facility categories as a function of reported Tier III Tank counts, the response rate was nearly 51%. Therefore, the survey results portray a representative cross-section across facility categories to make reliable assumptions for APC system costing within each facility category.

Tier III Tank categorization in the RDSIA was made conservatively and the actual number of Tier III Tanks that will be subject to the APC system requirement will likely be less than the number used in cost calculations for the high-cost scenario. For example, Tier II Tanks were counted towards the Tier III Tank total count, but do not require an add-on APC system and in fact meet compliance by use of a tank cover that becomes a one-time capital expenditure and is overall significantly cheaper than the installation and O&M of an APC system.

Regarding the comment on assumptions based on limited number of survey responses, the comment refers to a unique case where there is more than one tank at the facility. Based on over 50 facility site visits conducted by staff, the majority of the 27 are decorative facilities and only have one electroplating tank. There is a small overlap between decorative chrome plating facilities that are currently controlled only by chemical fume suppressants and also have Tier III tanks. Therefore, the assumption of one

APC system per facility if fume suppressants are not certified is appropriate. Please see Response to Comment 31-1 regarding low-cost alternative that meets the same emission limit as chemical fume suppressants.

Regarding the comment on adjusted Tier III Tank counts, for the Anodizing – Medium facility category, the count was adjusted to remove 20 passivation and chem film tanks that are currently air sparged and would be candidates for agitation using fluid eductors, which have a much lower cost. The Decorative – Medium and Decorative – Small facility category tank counts were adjusted to remove stripping tanks that have a hexavalent chromium concentration lower than 1,000 ppm. Tables 1-8 and 1-9 in the final Staff Report (page 1-20) include the requested data.

Regarding the comment on venting multiple to a single APC system, the RDSIA presents two costing scenarios, including the high-cost scenario in which each tank is assumed to be vented to its own APC system, and a low-cost scenario where two tanks were assumed to be vented to one APC system.

The analysis conducted in the RDSIA attempted to identify all sources of cost from one-time capital expenditures to recurring O&M and compliance costs. The evolution of the assumptions and rule language for PAR 1469 has included the input from industry stakeholders over 13 Working Group Meetings, multiple Stationary Source Committee hearings, more than 50 site visits, and correspondence with industry and economic consultants. Through this continual input, the RDSIA accurately estimated costs associated with PAR 1469, but makes conservatively higher cost assumptions to allow for unforeseen expenses incurred as a result of compliance. For example, as previously stated, the count of Tier III Tanks used in the analysis includes Tier II Tanks. Please see Responses to Comment 31-5 regarding spray rinsing and 31-6 regarding permitting.

The language in the RDSIA is neutral with respect to low-cost scenario versus the high-cost scenario and recognizes that this represents a range of potential costs since each facility would make a specific business decision as to method of compliance.

Regarding the comment on discount rate, SCAQMD staff began to calculate cost-effectiveness of control measures and rules using the Discounted Cash Flow method with a discount rate of 4%. The choice of the 4% discount rate was based on the 1987 real interest rate on 10-year Treasury Notes and Bonds, which was 3.8%. The maturity of 10 years was chosen because a typical control equipment life is 10 years; however, a longer equipment life would not have corresponded to a much higher rate- the 1987 real interest rate on 30-year Treasury Notes and Bonds was 4.4%. Since 1987, the 4%

discount rate has been used by SCAQMD staff for all cost-effectiveness calculations, including BACT analysis, for the purpose of consistency. The incremental cost reported in this assessment was thus annualized using a real interest rate of four percent as the discount rate. As a sensitivity test, a real interest rate of one percent was also used, which is closer to the prevailing real interest rate. Staff has seen nominal interest rates of 5%-7% used in regulatory impact analyses (including by the California Air Resources Board), but is not aware of regulatory impact analyses utilizing a 7% real interest rate.

On August 8, 2018, staff published the RDSIA, which included an additional provision for a low-cost compliance option that is as equally effective as chemical fume suppressants. Paragraph (l)(5) in PAR 1469 allows for use of this SCAQMD-approved alternative if no certified chemical fume suppressant is available after July 1, 2021. Although the probability for certification of a non-PFOS wetting agent chemical fume suppressant by 2021 cannot be ascertained at this time, the comment does not acknowledge the availability of the alternative compliance option, which adds additional pathways for a facility to avoid the requirements assumed in the high cost scenario. Staff identified four outcomes for the 27 facilities using chemical fume suppressants currently to meet the 0.01 mg/amp-hr emission limit:

1. By July 1, 2021, a certified non-PFOS wetting agent chemical fume suppressant is approved, and facilities require no modifications to their current process line;
2. If no certified chemical fume suppressant is available, facilities may use an SQAQMD approved alternative that achieves the equivalent emission limit as the chemical fume suppressant, and SCAQMD will assume the cost for initial source test verification of the emission limit;
3. If no certified chemical fume suppressant is available and there is no achievable means of meeting an equivalent emission limit, the facility would then be required to install an APC system for emission control of electrolytic tanks. SCAQMD staff is committed to seeking funding options for these smaller facilities should this be the case.
4. The facility can opt to phase out the use of hexavalent chromium by July 21, 2022.

31-8 Response: In response to the request to highlight the individual facilities most impacted by compliance costs, staff applied the facility-based impact analysis to this subset of facilities meeting SCAQMD's definition of a small business for the purpose of qualifying for access to services from SCAQMD's Small Business Assistance Office, or those facilities with an annual revenue of $5 million or less and 100 or fewer employees. Based on this definition, 64 out of 115 potential facilities were identified as a small business. These facilities have higher average cost impacts when compared to the average cost impacts of all 115 affected facilities. These 64 facilities have an average annual cost impact of 3.4% to 6.0% across all facility categories, with the most significant impacts affecting the Decorative (Medium) (7.1% - 11.0%), Anodizing (Medium) (5.4% - 8.8%), Anodizing (Small) (5.6% - 8.4%), and Decorative (Small) (3.8% - 8.3%) categories. All other categories had average annual cost impacts generally less than 3.1%. Upon closer inspection, a significant amount of the cost burden is potentially due to SCAQMD's assumptions regarding the classification of Tier II Tanks as Tier III Tanks leading to very conservative cost estimates (see Response to Comment 31-1). In addition, we have found some issues with Dun & Bradstreet's revenue and employee data that are also contributing significantly to the excess cost impacts on the subset of facilities classified as small businesses. We duplicated Table 9 of the RDSIA for the 64 facilities that meet the criteria of a small business in Table A-1 below.

Table A-1
Summary of Average Cost Impacts for 64 Facilities that Meet Small Business Definition (less than $5,000,000 in annual revenue and fewer than 100 employees)

Category	Average Facility Annual Cost (Low Cost Scenario - High Cost scenario)	Range of Facility Annual Cost (Min - Max)	Average Cost Impacts (Low Cost scenario - High Cost Scenario)
Anodizing (Medium)	$55,000 - $90,000	$59,094 - $97,154	5.4% - 8.8%
Anodizing (Small)	$44,000 - $65,000	$43,854 - $65,531	5.6% - 8.4%
Decorative (Large)	$3,000 - $3,000	$3,181 - $3,245	2.0% - 2.0%
Decorative (Medium)	$16,000 - $24,000	$15,514 - $23,970	7.1% - 11.0%
Decorative (Other)	$3,000 - $3,000	$3,038 - $3,108	3.0% - 3.0%
Decorative (Small)	$12,000 - $26,000	$12,118 - $26,482	3.8% - 8.3%
Hard (Large)	$22,000 - $30,000	$21,542 - $29,642	2.3% - 3.1%
Hard (Medium)	$7,000 - $7,000	$6,201 - $6,253	1.3% - 1.3 %
Hard (Small)	$2,000 - $4,000	$1,102 - $4,109	0.2% - 0.3%
Trivalent Other	$0 - $0	$226 - $226	0.0% - 0.0%
Total	**$22,000 - $36,000**	**$226 - $97,154**	**3.4% - 6.0%**

In an effort to be cost-conservative, the estimate of Tier III Tanks in the RDSIA includes tanks that will be Tier II Tanks if they are operated within the temperature and hexavalent chromium concentration defined in PAR 1469 Appendix 10. PAR 1469 allows Tier II Tanks to be controlled using much less expensive methods such as covers and mechanical fume suppressants as compared to Tier III Tanks which will require add-on pollution control devices, however the RDSIA assumes all Tier II Tanks will be Tier III tanks as a conservative cost assumption.

In addition, many of the stripping or electropolishing tanks that are currently assumed to be Tier III tanks in the RDSIA can drop below a concentration of 1,000 ppm for Tier I Tank and would not require in tank or add-on pollution controls to meet the emission limit requirements under PAR 1469. As shown in Table 1-9 of the Draft Staff Report, operators of stripping and electropolishing tanks have demonstrated that a tank bath can operate below a hexavalent chromium concentration of 1,000 ppm.

An actual example of an individual facility within the Anodizing (Small) category contains two stripping tanks that were identified as Tier III Tanks that could be considered non-Tier III Tanks. Under current conservative cost assumptions, this facility has a cost-to-revenue ratio of 12.5% to 18.7% for the low and high cost scenarios. Operating these tanks as non-Tier III Tanks would significantly reduce the facility costs from annualized capital costs and O&M costs for installing and operating APCs. The estimated cost-to-revenue would be 1.4%. With this more accurate estimate of the cost-to-revenue the revised average cost-to-revenue for Anodizing (Small) would be 1.9% to 2.6% for both the low and high cost scenarios.

In the category of Decorative (Medium) facility, Dun & Bradstreet underreported the employee count by 1300% when compared to inspector data. Closer review of the Dun & Bradstreet employee data used in the facility-based impact analysis indicates that facility revenues may be underreported. Comparison revealed large discrepancies between the Dun & Bradstreet employee count data and data gathered from SCAQMD inspector reports. SCAQMD inspectors visit Rule 1469 facilities quarterly and include the number of employees based on interviews with the owner or operator of the facility. Combining Dun & Bradstreet revenue data along with SCAQMD employee data for this facility, results in an average revenue per employee of just $2,864 annually. Typically, based on US Census Bureau data, one would expect to see revenue per employee 50 times that amount for the Electroplating, Plating, Polishing, Anodizing, and Coloring Industry (NAICS 332813). As a result of revenue underreporting, this facility has a cost-to-revenue ratio of 41.7% to 64.4% for the low and high cost scenarios. If this outliner is removed from the facility-based impact analysis results, the revised annual average cost impact for Decorative (Medium) would be 2.2 to 3.4%.

In the category of Decorative (Small) facility Dun & Bradstreet underreports a facility's employee count by 1300%. Using SCAQMD's employee count data results in an updated average revenue per employee of $9,882. This facility has a cost-to-revenue ratio of 9.4% to 20.6%. Staff believes the underreporting of employee data points toward Dun & Bradstreet potentially underreporting revenue data thus resulting in severely exaggerated cost impacts for those facilities.

In the Decorative (Small) facility, there are 12 stripping and electropolishing tanks. As previously discussed, in the RDSIA it is assumed that these tanks are Tier III Tanks and will install air pollution control devices. A more reasonable assumption is that facilities will take a lower cost option and either maintain a tank bath with a hexavalent chromium concentration below 1,000 ppm as demonstrated with other facilities (Table 1-9 of the Staff Report) or use a chemical stripping tank. This would reduce the annual average cost to about $5,000 per facility. The revised annual average cost for Decorative (Small) facilities would be 1.5% to 5.7%. The 5.7% cost-to-revenue reflects installation of add-on pollution controls if chemical fume suppressants are not certified. As previously discussed in the Staff Report, the SCAQMD staff is committed to seek funding and low cost alternatives if chemical fume suppressants are not certified.

In the category of Anodizing (Medium) there is one facility that meets small business definition. Staff believes that the revenue for this facility is likely underreported, leading to a cost-to-revenue ratio of 5.4% to 8.8% for the low and high cost scenarios. An indicator that the revenue reported for this facility may be underreported is the comparison to other Anodizing (Medium) facilities. In the category of Anodizing (Medium) there are sixteen facilities representing an average revenue of $24,000,000. This facility's revenue compared to the other Anodizing (Medium) facilities represents 4.6%. It is important to note that this outlier facility is the only facility in the anodizing medium category and contributes significantly to the inflated average cost impacts reported in the facility-based impact analysis. Table A-2 includes a column with revised average cost impacts for the 64 facilities with less than $5,000,000 in annual revenue.

Table A-2
Summary of Average Cost Impacts including Revised Cost Impact Estimates for 64 Facilities That Meet Small Business Definition (less than $5,000,000 in annual revenue and fewer than 100 employees)

Category	Average Facility Annual Cost (Low Cost Scenario - High Cost scenario)	Range of Facility Annual Cost (Min - Max)	Average Cost Impacts (Low Cost scenario - High Cost Scenario)	Revised Average Cost Impacts (Low Cost scenario - High Cost Scenario)
Anodizing (Medium)	$55,000 - $90,000	$59,094 - $97,154	5.4% - 8.8%	-[a]
Anodizing (Small)	$44,000 - $65,000	$43,854 - $65,531	5.6% - 8.4%	2.1% - 3.2% [b]
Decorative (Large)	$3,000 - $3,000	$3,181 - $3,245	2.0% - 2.0%	2.0% - 2.0%
Decorative (Medium)	$16,000 - $24,000	$15,514 - $23,970	7.1% - 11.0%	2.2% - 3.4%[c]
Decorative (Other)	$3,000 - $3,000	$3,038 - $3,108	3.0% - 3.0%	3.0% - 3.1%
Decorative (Small)	$12,000 - $26,000	$12,118 - $26, 482	3.8% - 8.3%	1.5% - 5.7%[d]
Hard (Large)	$22,000 - $30,000	$21,542 - $29,642	2.3% - 3.1%	2.3% - 3.1%
Hard (Medium)	$7,000 - $7,000	$6,201 - $6,253	1.3% - 1.3 %	1.3% - 1.3%
Hard (Small)	$2,000 - $4,000	$1,102 - $4,109	0.2% - 0.3%	0.2% - 0.3%
Trivalent Other	$0 - $0	$226 - $226	0.0% - 0.0%	0.0% - 0.0%
Total	**$22,000 - $36,000**	**$226 - $97,154**	**3.4% - 6.0%**	**1.7% - 3.7%**

[a] Revenue reported was 4.6% below average for all Anodizing (Medium) facilities. Only facility in category.

[b] Assumes facility with stripping tank will choose a lower cost option to maintain tank below 1,000 PPM or use a chemical stripper instead of installing an add-on air pollution control device.

[c] Removed outlier facility whose reported employees was 1300% below information provided and observed by SCAQMD inspector.

[d] Assumes 12 facilities with stripping and electropolishing tanks will choose a lower cost option to maintain tank below 1,000 PPM or use a chemical stripper instead of installing an add-on air pollution control device.

The MFASC attempted to account for compliance cost variability across facilities by using a binomial expansion to calculate the probability that a given number of Tier III Tanks are located at an individual facility. This analysis is based on data provided to the MFASC consultants by the SCAQMD regarding the number of facilities with Tier III Tanks and the total number of Tier III Tanks for each facility category. Ultimately, the MFASC used these probability calculations to estimate the number facilities with compliance costs exceeding the 3% and 5% cost to revenue thresholds. The analysis relies on a coarse approximation of the cost calculations used the SCAQMD's analysis. This approximation assumes a simple linear relationship between annual compliance costs and the number of Tier III Tanks at a facility, plus a fixed cost.

Staff believes the analysis presented also overstates the percentage of facilities in the Hard (Large) category with cost impacts greater than 3% of revenues. Neglecting to condition the probability calculations on the assumption that 9 of 18 facilities do not contain Tier III Tanks leads to overestimating the number of facilities exceeding the 3% cost threshold by approximately 20% in the high cost scenario. In addition, the commenters report 'preliminary' analysis for the Decorative (Small) category. No data or assumptions accompany the commenter's findings, but if we apply the same cost function approximation used in the Hard (Large) analysis, along with a total of 8 Tier III Tanks across 27 facilities in the Decorative (Small) category, and a 5% closure threshold, staff finds that the MFASC overestimates the number of closures by 255% at minimum.

31-9 Response: Please see Responses to Comments 31-1, 31-7 and 31-8 for a discussion of the impacts on small businesses.

The resolution includes a provision to seek financial assistance to assist facilities in installation of pollution controls or use of non-toxic alternatives, if non-PFOS chemical fume suppressants are not re-certified, and to identify a low-cost compliance option that is as equally effective as chemical fume suppressants. The MFASC's suggestion of a Board Resolution seeking financial assistance irrespective of whether non-PFOS fume suppressants are recertified was not incorporated.

In addition, staff believes there may be difficulty administering a financial assistance program where costs and revenue cannot be accurately verified. A provision that would allow a facility access to financial assistance based of their capital cost estimates may be difficult to ensure the facility is not overestimating actual costs. Some facilities have indicated that they intend to install more than what is directly required by PAR 1469.

September 4, 2018

William A. Burke, Ph. D., Chair – Speaker of the Assembly Appointee
Dr. Clark E. Parker Sr., Vice Chair – Senate Rules Committee Appointee
Supervisor Marion Ashley – Fifth District ~ County of Riverside
Mayor Ben Benoit – City of Wildomar ~ Cities of Riverside County
Council Member Joe Buscaino – 15th District ~ City of Los Angeles
Council Member Michael A. Cacciotti – City of South Pasadena ~ Cities of Los Angeles County ~ Eastern Region
Joseph K. Lyou, Ph. D – Governor's Appointee ~President & CEO Coalition for Clean Air
Mayor Larry McCallon – City of Highland ~ Cities of San Bernardino County
Mayor Pro Tem Judith Mitchell – City of Rolling Hills Estates ~ Cities of Los Angeles County ~ Western Region
Supervisor Shawn Nelson - Fourth District ~ County of Orange
Council Member Dwight Robinson - City of Lake Forest ~ Cities of Orange County
Supervisor Janice Rutherford – Second District ~ County of San Bernardino
Supervisor Hilda L. Solis – First District ~ County of Los Angles

Dear Board Members of the South Coast Air Quality Management District,

RE: Opposed to adoption of Rule 1469

The Del Amo Action Committee (DAAC) is asking the South Coast Air Quality Management District (SCAQMD) Governing Board to withhold approval of Rule 1469. This request is being made because the rule as currently written does not insure that dangerous Hexavalent (HX) Chrome emissions will be significantly reduced. The rule does not provide adequate and certain protection for the people living near the facilities or the children and teachers in schools. It would be extremely difficult to enforce the rule's requirements. 32-1

The SCAQMD is doing exceptional work in Paramount and in other Los Angeles communities in identifying unacceptable HX Chrome emissions, identifying the companies causing the emissions and ordering them to reduce the emissions. This work has enabled the SCAQMD to more specifically identify the sources of those emissions. We anticipated the revision to Rule 1469, an amendment, to compliment and support this tremendous work. **Unfortunately it does not.**

P. O. Box 549, Rosamond, California 93560
Office: 661-256-7144

Robina Suwol, Executive Director of California Safe Schools, Cynthia Babich, Del Amo Action Committee (DAAC) Executive Director and Florence Gharibian DAAC Chair met with Susan Nakamura SCAQMD Assistant Deputy Executive Officer and her staff to discuss Draft Rule 1469 on August 23, 2018. This meeting was convened due to comments Mrs. Gharibian offered during an August Stationary Source meeting. In part Mrs. Gharibian was motivated to comment because she overheard an industry representative briefing other industry representatives before the July 2018 Stationary Source meeting saying that the rule was much better. "All the enforcement had been taken out and the rule was much lighter". 32-1 (cont'd)

The draft rule is replete with alternative options that undermine essential rule requirements. The rule continues to rely heavily on chemical fume suppressants rather than known, technically feasible air pollution controls. Rule requirements regarding HX Chrome tank enclosures have unacceptable compromises. The rule provides approved housekeeping methods that will almost certainly expose workers to higher levels of HX Chrome and will almost certainly result in additional environmental contamination. The rule does not clearly define emission limits for HX Chrome; it is not possible to identify this essential bottom line. 32-2

The rule has building enclosure requirements, but also includes language that minimizes those requirements. The rule requirements for emission controls focus on the HX Chrome tanks. Monitoring emissions from these tanks to ensure compliance with the requirements would be very difficult; in fact one of the biggest problems with this rule is the lack of monitoring associated with it. 32-3

SCAQMD air monitoring in Paramount is based on HX Chrome ambient air emissions and comparison with background levels. The SCAQMD imposed stricter enclosure requirements at a facility in Newport Beach, requiring negative pressure in the areas of a facility where HX Chrome tanks are located. This has resulted in much lower HX Chrome emissions. If this standard were applied to all HX Chrome facilities it would provide greater insurance of significant reductions. According to the CA Air Resources Board (ARB), the Los Angeles Area has 17% higher readings for HX Chrome than anywhere else in the state. This also argues for maximum control of HX Chrome emissions via total enclosure with negative air. 32-4

The draft Rule 1469 has the potential imposition of a strict total enclosure requirement on facilities if they fail critical source tests. These source tests are conducted by facility operators. The SCAQMD Executives Officer (EO) would be notified and SCAQMD staff could observe the tests but this is not anticipated in the rule. Greater confidence in the source test findings would be achieved if trained SCAQMD staff participated in the source tests. The language for an initial source test is confusing and may or may not require submittal of a source test protocol with approval from the EO before the source test is completed. Subsequent source tests at larger facilities are not due before 5-7 years. Adequate source testing provides information to demonstrate controls are effective. Five years is too long to wait for this critical information. 32-5

Members of the Los Angeles Environmental Justice (LA EJ) Network are lobbying for laws and regulations to phase out HX Chrome in California. Because HX Chrome has no safe threshold level exposure and because we anticipate the dangerous chemical will continue to be used, until a phase out can be achieved, it is vital that maximum precautions be set in place to significantly reduce exposures 32-6 to metal plating shop workers and the surrounding communities. **Unfortunately Rule 1469 as currently drafted will not achieve this goal.** What is needed is an absolute bottom line HX Chrome emission restriction. That restriction should be understandable clearly defined and with clear steps on what is needed to achieve this limit. 32-6 (cont'd)

The rule language is disorganized and inconsistent. Mrs. Gharibian carefully reviewed the draft version of the rule published on August 8, 2018. She found conflicting language regarding building enclosure, use of air pollution control equipment, time frames and distances from sensitive receptors. Some distances are measured in meters, some in feet, etc. Some begin at property borders, some at tanks and stacks. The rule provides multiple options for gaining EO approval to use alternatives, allowing them to be in compliance with the rule. Several steps require submittal of documents and EO approval before the work is completed. These include certification of training, etc. One section offers an "alternative for compliance" which is the submittal of a permit application including some but not all the rule requirements. This alternative is offered on page 46 of the document. An attempt to prepare a flow chart describing rule conditions, compliance dates and alternatives would result in a mysterious maze that would frustrate the most ardent engineer. 32-7

We understand that ARB is currently in the process of updating their HX Chrome rule. We recommend that SCAQMD staff work with the ARB, share the draft 1469 Rule language and commit to revisions of both updates that result in clear, understandable requirements that provide certainty to the regulated community and protection to communities where the facilities are located. We think this is an appropriate and necessary endeavor. 32-8

Cynthia Babich
Director
Del Amo Actin Committee

Florence Gharibian
Board Chair
Del Amo Action Committee

Responses to Del Amo Action Committee Comment Letter, submitted 9/4/18

32-1 Response: Implementation of Proposed Amended Rule (PAR) 1469 will require pollution controls on hexavalent chromium tanks that are currently not regulated, add requirements for building enclosures, parameter monitoring, and periodic source testing, and include limitations and restrictions for facilities located near sensitive receptors and schools. All of these requirements will reduce hexavalent chromium emissions from facilities subject to Rule 1469. Furthermore, PAR 1469 incentivizes facilities that make an early commitment to phase out hexavalent chromium from their process by delaying requirements to install add-on air pollution controls on Tier III Tanks.

During the rulemaking process for PAR 1469, staff conducted site visits and met with all stakeholders to understand their concerns. Based on this feedback, staff either included rule language changes or explained to the stakeholders why certain requested changes would not be made.

All requirements in PAR 1469 are enforceable. PAR 1469 includes additional requirements which will reduce the hexavalent chromium emissions from facilities and clarified ambiguous rule language to ensure rule enforceability.

32-2 Response: PAR 1469 allows use of an alternative compliance method provided it is meets specific criteria and is approved by the Executive Officer. Alternative compliance methods are not exemptions from a provision, but allow the operator to identify a different method that was not considered during the rulemaking process or to develop a method to address a unique situation at a facility. The Executive Officer will evaluate the alternative method to ensure it is equally as effective in meeting the air quality objective of the method it is replacing. The following provides examples of alternative compliance methods in PAR 1469:

- PAR 1469 requires a facility to close openings to eliminate cross-draft. In addition to some specific options such as a door that automatically closes, overlapping plastic strip curtains, vestibule, or an airlock system, subparagraph (e)(1)(E) allows an:
  - "Alternative method to minimize the release of fugitive emissions from the building enclosure that the owner or operator of a facility can demonstrate to the Executive Officer is an equivalent or more effective method(s) to minimize the movement of air within the building enclosure."
- Paragraph (e)(6) includes a provision that if an operator claims that the building enclosure provisions are in conflict with OSHA or CAL-OSHA or other requirements, the operator must:
  - Submit a Building Enclosure Compliance Plan for Executive Officer approval that:

  - Identifies the building enclosure provisions that are in conflict with OSHA or Cal-OSHA or other municipal codes or agency requirements; and
  - Includes alternative measures that minimize the release of fugitive emissions to the outside of the building enclosure.
- Subdivision (i) includes provisions for an "Alternative Compliance Method" for meeting the emission limits for electroplating and anodizing tanks and Tier II and III Hexavalent Chromium Tanks. This provision is an existing provision that allows an owner or operator to submit for approval an alternative compliance method that "provides an equal, or greater hexavalent chromium emission reduction, and provides an equal or greater risk reduction that compliance with emission limits specified in paragraphs (h)(2) and (h)(4)".

Use of chemical fume suppressants is an existing provision under Rule 1469. Currently, Rule 1469 allows the following two categories of facilities to use chemical fume suppressants as their sole means of controlling hexavalent chromium from plating or anodizing tanks:

- A facility less than 330 feet from the nearest sensitive receptor and less than 20,000 amp-hours/year facility-wide; or
- A facility greater than 330 feet from nearest sensitive receptor and less than 50,000 amp-hours/year facility-wide.

There are currently 27 facilities in the universe of 115 facilities that are using chemical fume suppressants as their sole means of controlling hexavalent chromium emissions. These represent the smallest throughput facilities. Based on permitted amp-hours, these facilities on average represent less than 1% of the average permitted amp-hours per facility.

Chemical fume suppressants are able to reduce hexavalent chromium emissions by approximately 99 percent. This has been an effective control approach for smaller throughput facilities. PAR 1469 establishes a schedule to re-evaluate chemical fume suppressants based on their emissions and health effects. If chemical fume suppressants are not certified, these 27 facilities will have three options: use a SCAQMD approved alternative that is equivalent or better than chemical fume suppressants, install add-on pollution controls, or phase-out the use of hexavalent chromium.

PAR 1469 includes building enclosure requirements for Tier II and Tier III Hexavalent Chromium Tanks, which currently do not exist in Rule 1469. The building enclosure requirements ensure that PAR 1469 continues to be health protective while allowing adequate access to buildings and taking into account building safety requirements.

Most of the housekeeping provisions in PAR 1469 are existing requirements. Housekeeping methods will not increase the exposure of workers to hexavalent chromium or result in additional contamination.

PAR 1469 added a definition of "approved cleaning method" which includes many of the cleaning methods allowed under the existing Rule 1469. In addition to the methods allowed by the existing Rule 1469, PAR 1469 allows the use of low pressure water spray nozzles, removed the use of hand wiping, and chemical dust suppressants to comply with housekeeping provisions. Under the existing Rule 1469 and PAR 1469, wastewater from cleaning operations will need to adhere to state and federal wastewater requirements. Based on staff site visits, Rule 1469 facilities have on-site wastewater treatment systems to treat wastewater from cleaning operations as well as other parts of their operations. The environmental impacts of PAR 1469 were analyzed and disclosed in the Environmental Assessment.

PAR 1469 includes clearly defined emission limits for electrolytic tanks and Tier II and III Hexavalent Chromium Tanks. For hard and decorative electroplating and chromic acid anodizing tanks, emission limits are specified in Table 1. These emission limits are consistent with CARB's Air Toxics Control Measure (ATCM) for chromium plating and anodizing. For Tier II and Tier III Tanks, emission limits are specified under paragraphs (h)(4) and (h)(5), respectively.

32-3 Response: The building enclosure requirements in PAR 1469 are specified in subdivision (e). Rule 1469 currently does not include any building enclosure requirements and by including these additional requirements, PAR 1469 is more stringent and health protective. Although U.S. EPA's Method 204 allows for building openings of up to 5%, PAR 1469 only allows openings of up to 3.5% since there are no requirements for negative air. The building enclosure requirements ensure that PAR 1469 continues to be health protective while allowing adequate access to building and taking into account building safety requirements.

PAR 1469 strengthens the existing provisions for monitoring by incorporating the following provisions:

- In paragraph (k)(1), requiring periodic source test once every five years for facilities with a throughput of greater than 1,000,000 amp-hours annually; and once every seven years for facilities with a throughput of less than or equal to 1,000,000 amp-hours annually (Existing Rule 1469 only requires a one-time source test).
- In subparagraph (m)(1)(B), measuring the inlet velocity of air flow of add-on pollution controls to ensure the collection efficiency is being maintained.

Provisions to measure the collection efficiency complement existing provisions to conduct a smoke test to ensure the air flow is not being impacted by cross-drafts, and monitoring the pressure across the filter media for early identification of a breach or clog in the filter media of the air pollution control device. In addition, PAR 1469 places greater emphasis on these monitoring provisions by using more than one non-passing source test within a 48-month period and failure to shut down a tank after either a failed smoke test or collection efficiency test as the triggers for installation of a permanent total enclosure. Staff considers the impact to the regulated community while maintaining the objective of public health protection. More than half of the facilities regulated under PAR 1469 meet the SCAQMD's definition of small business – less than 100 employees and $5,000,000 in annual revenue. After installation of add-on pollution controls, source testing is the next most expensive provision. PAR 1469 provides additional source testing and parameter monitoring, while considering the impact to businesses affected by these proposed requirements.

Ambient monitoring will be addressed in Proposed Rule 1480 and will include facilities that emit metal toxic air contaminants.

32-4 Response: The requirements at the Newport Beach facility were a result of an Order for Abatement, which focused on the specific situation at that facility. This is separate from rulemaking.

PAR 1469 includes a conditional provision to require a permanent total enclosure. SCAQMD staff believes the most important provisions under PAR 1469 are the direct emission controls for high emitting hexavalent chromium tanks and building enclosure requirements. The estimated cost for a permanent total enclosure is $92,000 assuming 6 air exchanges per hour to $170,000 assuming 15 air exchanges per hour. PAR 1469 will substantially reduce hexavalent chromium emissions. As previously mentioned, staff considers the impact to the regulated community while maintaining the objective of public health protection. More than half of the facilities regulated under PAR 1469 meet the SCAQMD's definition of small business – less than 100 employees and $5,000,000 in annual revenue.

32-5 Response: PAR 1469 requires that facilities submit a protocol that will detail how the source test will be conducted. Most facilities will use a source testing company to conduct the source test. The source testing company is required to follow the approved protocol. The results of the source test are submitted to SCAQMD staff for review and approval. If the source test is not conducted pursuant to the approved protocol, the source test will not be approved and the facility could be required to correct the deficiency or conduct another source test. PAR 1469 requires that the facility notify the Executive Officer prior to conducting the source test so staff can witness the source test.

The initial source test requires submittal of a source test protocol. Operators may rely on an existing approved protocol for subsequent source tests if operating parameters of the tank and the pollution controls have not changed.

PAR 1469 relies on a variety of tools to ensure proper operation of air pollution control devices. Although the source tests are conducted every five to seven years, monitoring of key parameters of the air pollution control device such as the pressure across the filter media, smoke tests, and velocity tests are conducted at least twice a year. As previously discussed, this industry has a high percentage of small businesses. Staff took into account the financial impact and public health protection during the development of PAR 1469.

32-6 Response: The Resolution includes a commitment for the SCAQMD staff to work with the state on phasing out the use of hexavalent chromium, where appropriate. In addition, the Resolution also includes a commitment to conduct a technology assessment on alternatives to hexavalent chromium for metal finishing operations and to conduct a pilot study. The SCAQMD staff is committed to working with stakeholders to evaluate alternatives to hexavalent chromium and to work towards a phase-out.

PAR 1469 will reduce exposures to workers and surrounding communities from hexavalent chromium. Installation of pollution controls on tanks that are currently unregulated that were previously not known to have high hexavalent chromium emissions will substantially reduce the exposure to hexavalent chromium to workers as well as the surrounding communities. Implementation of building enclosure provisions will also further reduce exposure to neighbors surrounding hexavalent chromium plating and anodizing facilities.

PAR 1469 establishes strict hexavalent chromium emission standards for hard and decorative plating tanks, anodizing tanks, and Tier II and III Hexavalent Chromium Tanks. Provisions are specified under subdivision (h).

32-7 Response: As staff explained in our meeting with representatives of the Del Amo Action Committee, the format of PAR 1469 follows CARB's ATCM and builds upon the structure of currently existing Rule 1469. During the rulemaking for PAR 1469, staff took out sections of the rule language and moved them to an appendix, placed confusing text within a table format, as well as provided additional clarity on provisions which were confusing for facilities to comply with and SCAQMD staff to enforce. One example of this change is that staff replaced all the units in PAR 1469 to consistently use feet instead of meters and feet.

The distances in PAR 1469 are different depending on the specific provision. When specifying distances in PAR 1469, staff either based those distances on the standard approach of health impacts which uses the emission source (i.e. edge of tank or centroid of emission point sources) or from the edge of the facility property for fugitive sources. PAR 1469 also maintains consistency with CARB's ATCM, which specific how distances should be calculated. Some distances were increased in order to be more health protective towards schools based on feedback from stakeholders. For example, subparagraph (e)(3)(A) requires that openings directly facing and within 1,000 feet of the nearest sensitive receptor, excluding schools, be closed while subparagraph (e)(3)(B) requires that that openings directly facing and within 1,000 feet of the nearest school be closed.

PAR 1469 includes provisions under subdivision (i) for an "Alternative Compliance Method" for meeting the emission limits for electroplating and anodizing tanks and Tier II and III Hexavalent Chromium Tanks. The provision is not just the submittal of a permit application. This provision is an existing provision that allows an owner or operator to submit for approval an alternative compliance method that "provides an equal, or greater hexavalent chromium emission reduction, and provides and equal of greater risk reduction that compliance with emission limits specified in paragraphs (h)(2) and (h)(4). As explained in Response to Comment 32-2, alternative compliance methods are not exemptions from a provision, but allow the operator to identify a different method that was not considered during the rulemaking process or to develop a method to address a unique situation at a facility. This allows facilities flexibility in ensuring compliance while still meeting the rule requirements and emission limits.

32-8 Response: Staff is committed to work with CARB on revisions to the state ATCM for plating and anodizing operations.

September 5th, 2018

Honorable Board Chair Burke & Boardmembers
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Honorable Board Chair Burke & Boardmembers,

We are deeply appreciative of the extensive efforts the District spearheaded in the City of Paramount, Compton and the collaboration with other agencies to identify hexavalent chromium, nickel metals, and other highly toxic emissions through monitoring and inspections.

Our organizations have actively participated in the 1469 Rule meetings and Workshops with staff from its inception. We have consistently expressed concerns about emissions from hexavalent chromium near homes and schools adjacent to facilities and the toxic hexavalent chromium and other chemicals including the fume suppressants. We have also expressed concerns about the vulnerable staff working in these facilities.

While we are grateful for the opportunity to comment, we cannot support Rule 1469 because of the following issues that we have consistently raised in Workshops, Meetings, and in discussions with staff:

1) Rule 1469 does not include monitoring to verify that anticipate emissions reductions are occurring. 33-1
2) Chrome platers can operate their facility with the doors open for hours at a time. This would allow highly toxic chemicals to be emitted into schools yards and onto residential properties. 33-2
3) Parks have been omitted from the definition of places where sensitive receptors need protection. Parks are often adjacent to schools, and have cooperative agreements that allow schools to plant gardens, hold outdoor classes, school related celebrations, and athletic events. Many families reside in areas with limited green space and frequent parks in the way others would use their back yards. Parks have been previously included in other rules for protection from the release of toxic chemicals. 33-3
4) The rule is inconsistent on the distances from schools and sensitive receptors. Is distance measured from the tanks, school or sensitive receptor property line, or stacks? 33-4
5) The rule is inconsistent in terms of measurements. For example, in some instances feet are used to measure distances and in other meters. 33-5
6) Under this rule the facilities appear to be without consistent thorough oversight to ensure emission are reduced and ultimately eliminated 33-6
7) We know that both the hexavalent chromium and the fume suppressants used in this industrial process are highly toxic. Rule 1469 fails to provide much needed protections from exposure to these chemicals. 33-7

In October of 2017 our organizations and many others signed onto a letter to Executive Officer Wayne Nastri outlining concerns. The concerns we raised then, remain. Below, is a copy of that letter. 33-8

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From: Robina <robinasuwol@earthlink.net>
To: wnastri@aqmd.gov
Cc: snakamura@aqmd.gov, ekang@aqmd.gov
Subject: RE: RULE 1469 - Chrome Plating Facilities (please see attached)
Date: Oct 25, 2017 10:28 AM
Attachments: FINAL NASTRI 10252017 RULE 1469.pdf

Dear Executive Officer Nastri,

I have been asked to forward this letter surrounding Rule 1469.
Thank you for your consideration.

Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

October 25, 2017

Dear Mr. Nastri,

Our organizations are very concerned about the lack of protections for communities in the proposed chrome plater rule which South Coast is planning on issuing in a few months. The rule has been significantly weakened since it was first proposed, abandoning ambient monitoring provisions, scaling back the use of HEPA filters, and removing the requirements for total enclosure with negative air. To say we are disappointed is an understatement. 33-8 (cont'd)

Chrome platers emitting hexavalent chromium into our communities have been very problematic in the South Coast Basin for a long time. Many of our organizations worked on the existing state rule in 2006 and the subsequent local rules in South Coast. We pushed hard for the best protections available then, and to have more stringent requirement for platers located next to schools and sensitive receptors. It is apparent to us now that many facilities just did not comply with the rules and some sources went completely unregulated altogether. From the plater next to Suva School, to Master Plating, to the platers in Paramount and Compton now, the devastating public health effects to communities hosting these plating operations are an endemic part of the terrible history of environmental injustice in the South Coast region.

Chrome platers are concentrated in the Los Angeles area. No one really knows how many of these facilities exist, not even your own staff, but over 10% of all the chrome platers in the nation call the South Coast air basin their home. New facilities operating without permits are discovered often. These platers, already concentrated in our air basin, are further concentrated in low-income communities of color where enforcement is lax and regulators commonly turn a blind eye to complaints about odors and

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emissions. The communities of Paramount, Compton, and parts of East Los Angeles all have concentrated pockets of platers.

This concentration of chrome platers in communities is further exacerbated by other sources of hexavalent chromium emissions such as forgers and metal heat treaters, and potentially other sources not yet identified. Since there are so few air monitors in the basin which detect hexavalent chromium, it would be simply blind luck if a monitor were to be placed in one of these areas of concentration. Ironically, it was the air monitor placed to measure the emissions from Carlton Forge which inadvertently identified the platers in Paramount as a hexavalent chromium air pollution hot spot.

Each and every source of hexavalent chromium is contributing to the emissions which are endangering our communities. Each and every source needs to take on the responsibility to cease to emit this highly toxic chemical into our homes, schools, play yards, community centers, and churches. Our communities should not bear the burden for these emissions with their health and well-being.

When the original rule making on chrome platers started earlier this year it envisioned robust monitoring and rigorous air pollution controls for platers. However, pressure from the plating industry has your agency back-tracking on those measures. Without the monitoring, robust pollution controls, and total enclosure of all the industrial processes emitting these dangerous emissions we are no longer confident that this regulatory effort will protect our communities. 33-8 (cont'd)

We urge you and your staff to consider the damage to public health which releases of hexavalent chromium are known to cause in the communities hosting these hexavalent chromium sources. We also urge you to think about the environment which the workers at these facilities are laboring in; these hexavalent chromium emissions are dangerous to all who work in this industry. We need the agency to insure that these facilities are made to completely capture these dangerous emissions, and to have the necessary monitoring sufficient to ensure compliance with the rules.

The European Union has just passed a regulation which will end the use of chromium for decorative purposes; we urge the South Coast AQMD to consider such as action as well. South Coast has taken similar actions before on dry cleaning facilities to ban chemicals which were damaging air quality and we urge you to consider to doing this for chromium as well.

If our experiences in the communities we represent teach us anything, we have learned that we cannot rely on anything but robust monitoring and a strong enforcement presence to ensure that these facilities are being operated properly and that our communities get the protections they deserve from their government. We urge you to work with us to create a rule which will ensure that families, teachers, workers, parishioners, and community residents are safe from hexavalent chromium in their communities.

Respectively,

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Action Now
Mitzi Shpak, Executive Director
Altadena, CA

American Legion Post 6
Pastor Anthony Quezada
1927 E. Plymouth St. Long Beach, CA

Apostolic Faith Center
Pastor Alfred Carrillo
1510 E. Rubidoux St. Wilmington, CA

California Communities Against Toxics
Jane Williams, Executive Director
Rosamond, CA

California Safe Schools
Robina Suwol, Executive Director
Los Angeles, CA

33-8
(cont'd)

California Kids IAQ
Drew Wood, Executive Director
Wilmington, CA

Coalition for a Safe Environment
Jesse Marquez, Executive Director
Wilmington, CA

Comité Pro Uno
Felipe Aguirre, Coordinator
Maywood, CA

Community Dreams
Ricardo Pulido, Executive Director
Wilmington, CA

Del Amo Action Committee
Cynthia Medina, Assistant Director
Torrance, CA

4

Earthworks Films, Inc.
Maria Florio, President
Sherman Oaks, CA

East Yard Communities for Environmental Justice
Mark Lopez, Executive Director
Commerce, CA

EMERGE
Magali Sanchez-Hall, MPH, Executive Director
Wilmington, CA

Exide Worker Community Committee
John Sermeno, Executive Director
Maywood, CA

Federación Veracruzana
Angel Morales, President 33-8 (cont'd)
Huntington Park, CA

Los Angeles Environmental Justice Network
Cynthia Babich, Coordinator
Rosamond, CA

Mary Cordaro Inc.
Mary Cordaro Environmental and Healthy Building Consultant
Valley Village CA

Maywood Youth Soccer Association
Luis Orizaba, Director
Maywood, CA

Mothers of East Los Angeles
Teresa Marquez, President
Los Angeles, CA

Mujeres Pro Maywood
Elizabeth Matamoros, President
Maywood, CA

5

NAACP San Pedro-Wilmington Branch # 1069
Joe R. Gatlin, Vice President
San Pedro, CA

Our Right To Know
Rhonda Jessum, Ph.D., Director
Los Angeles, CA

Padres Unidos de Maywood
Teresa Solorio, President
Maywood, CA

Paramount Community Coalition Against Toxins
Magdalena Guillen, Executive Director
Paramount, CA

Pacoima Beautiful
Yvette Lopez-Ledesma, Deputy Director 33-8 (cont'd)
Pacoima, CA

Philippine Action Group for the Environment
Fe Koons, President
Carson, CA

Physicians for Social Responsibility – LA
Martha Dina Arguello, Director
Los Angeles, CA

Randall Enterprises, Inc.
David Randall, President
Sherman Oaks, CA

Resurrection Catholic Church
Monsignor John Moretta, Pastor
Los Angeles, CA

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San Pedro & Peninsula Homeowners Coalition
Dr. John G. Miller, MD, President
San Pedro, CA

Society for Positive Action
Shabaka Heru, President
Los Angeles, CA

St. Philomena Social Justice Ministry
Modesta Pulido, Chairperson
Carson, CA

Watts Labor Community Action Committee
Timothy Watkins, President/CEO
Los Angeles, CA

Wilmington Improvement Network
Anabell Romero Chavez, Board Member
Wilmington, CA 33-8 (cont'd)

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Respectfully,

Robina Suwol
Executive Director, California Safe Schools
Los Angeles, CA

Jane Williams, Executive Director
California Communities Against Toxics
Roasamond, CA

Felipe Aguirre
Comité Pro Uno, Coordinator
Maywood, CA

Magdalena Guillen, Executive Director
Paramount Community Coalition Against Toxins
Paramount, CA

Jesse Marquez, Executive Director
Coalition for a Safe Environment
Wilmington, CA

Responses to Environmental Multi-Agency Comment Letter (34 commenters, Action Now, et. al.), submitted 9/5/18

33-1 Response: Ambient monitoring will be addressed in Proposed Rule 1480 and will include hexavalent chromium plating and anodizing facilities as well as other facilities with metal toxic air contaminants emissions. PAR 1469 includes additional source testing and parameter monitoring requirements which are not in existing Rule 1469 and are proposed to be added to ensure that pollution controls are being maintained in proper working condition and emission limits are not exceeded.

33-2 Response: PAR 1469 includes building enclosure requirements for Tier II and Tier III Hexavalent Chromium Tanks, which currently do not exist in Rule 1469. PAR 1469 has provisions to minimize openings and additional provisions for openings directly facing the nearest sensitive receptor, excluding schools, within 1,000 feet and directly facing the nearest school within 1,000 feet. The building enclosure requirements ensure that PAR 1469 continues to be health protective while allowing adequate access to buildings and taking into account building safety requirements.

33-3 Response: SCAQMD currently uses a definition of sensitive receptor which does not include parks. Based on staff conversations with OEHHA, this is consistent with their interpretation that although sensitive receptors could be found at a park, the time spent at a park is intermittent and is not a repeated long-term exposure, such as at homes. In Rule 1466, parks were identified as part of the definition of an adjacent athletic area, not as a sensitive receptor. This was done because some schools might use adjacent parks for physical education and therefore, earth moving activities at contaminated sites would be restricted when school related activities were occurring.

33-4 Response: The distances in PAR 1469 are different depending on the specific provision. When specifying distances in PAR 1469, staff either based those distances on the standard approach of health impacts which uses the emission source (i.e. edge of tank or centroid of emission point sources) or from the edge of the facility property for fugitive sources. PAR 1469 also maintains consistency with CARB's ATCM, which specific how distances should be calculated. Some distances were increased in order to be more health protective towards schools and sensitive receptors based on feedback from stakeholders. For example, subparagraph (e)(3)(A) requires that openings directly facing and within 1,000 feet of the nearest sensitive receptor, excluding schools, be closed while subparagraph (e)(3)(B) requires that that openings directly facing and within 1,000 feet of the nearest school be closed.

33-5 Response: Staff has replaced all the units in PAR 1469 to consistently use feet instead of meters and feet.

33-6 Response: During the rulemaking for PAR 1469, staff took out sections of the rule language and moved them to an appendix, placed confusing text within a table format, as well as provided additional clarity on provisions which were confusing for facilities to comply with and SCAQMD staff to enforce. SCAQMD Compliance and Enforcement staff inspect Rule 1469 facilities quarterly to ensure rule compliance.

33-7 Response: Implementation of PAR 1469 will require pollution controls on hexavalent chromium tanks that are currently not regulated, add requirements for building enclosures, parameter monitoring, and periodic source testing, and include limitations and restrictions for facilities located near sensitive receptors and schools. All of these requirements will reduce hexavalent chromium emissions from facilities subject to Rule 1469. PAR 1469 includes a compressed schedule to evaluate the emissions and exposure of non-PFOS chemical fume suppressants and determine with CARB if the non-PFOS chemical fume suppressants will be certified. If not certified, facilities will need to either implement an SCAQMD approved alternative, install air pollution controls, or phase out the use of hexavalent chromium.

33-8 Response: This comment includes a previously submitted comment letter (Comment Letter #3), which has been responded to.

From: Wesley Turnbow [mailto:wturnbow@emeplating.com]
Sent: Monday, October 8, 2018 3:28 PM
To: Philip Fine <pfine@aqmd.gov>; Susan Nakamura <SNakamura@aqmd.gov>
Cc: Jillian Wong <jwong1@aqmd.gov>; Daniel Garcia <dgarcia@aqmd.gov>; Mike Garibay <MGaribay@aqmd.gov>; 'Brian Ward' <brian@aaaplating.com>
Subject: RE: Governing Board Meeting and 1469 Economics

Hello Phil and Susan,

Let me start by saying that I only wished to express at the board meeting that we had not been contacted by staff. Nothing more. That is, obviously, no longer true. Given that things got moved forward from December and given our past communications, I was expecting a call in further regards to the economics. The economics seemed to be the board's concern in September. Perhaps your team feels there is nothing left to do in regards to making the rule amendment more affordable, and much has already been done. So perhaps there is little that can be realistically done at this point to relieve costs without significantly affecting emissions. But here are a few more thoughts: 34-1

(1) The Tier curve was created, in part, by running my dilute tank with the inductor pump on the entire time of testing. This should never happen, and in fact it blew out our $800 motor. Inductors are only ran in short bursts prior to processing. The curve could, therefore, be restated (also include Brian Ward's ideas) to exclude some fringe tanks, like some passivates and chemical films. Each source control costs a bundle (controls, testing, space which can and will lead to some city permitting). 34-2
(2) A larger, and therefore, more realistic range for slot velocity testing is needed. Field enforcement on this could lead to some readings that will need to be contested because of the fluctuations in these kind of measurements. This will cost the shops resources and money. 34-3
(3) I still feel there is a place for excluding small tanks and/or small emitter tanks even further by using mechanical covers instead of source controls. Huge costs here, particularly as a percentage of smaller shop sales. 34-4

Even as we head towards the end, I continue to hear real concerns, even fear. A few examples from this week – remember last week we explained to our members how to comply with the current version and encouraged them to start the process (I know that I failed to give you any time to assist in this training. Sorry for the lack of any real notice). One company stated that they could not figure out how to fit source controls on a process crane-line that uses all the building space; they also stated that they would need to utilize a parking space or two for the source controls and wasn't sure that the city would allow them to give up any parking. Another company said that the city said it would not allow any structural changes unless they combined their multiple buildings into one on the county property roles; this would take at least six months and allow the city to then force changes to go across all the properties at a now significant higher cost for permitting any improvements. Yet another company stated that they would spend $5,000 just to have an engineer look at the roof structure that they hoped would support the source controls. As you can image, removing just a few tanks that are on the edge of the rule parameters from enforcement will gain us worthwhile cost reductions. 34-5

Sincerely,

Wesley
MFASC

Responses to Metal Finishing Association of Southern California (MFASC) Comment Email (10/8/18)

34-1 Response: SCAQMD has worked closely with MFASC and Environomics throughout the rule development process to minimize costs for implementation of PAR 1469. On October 17, 2018, SCAQMD staff met with Brian Ward, and Brian Leiker to discuss some addition revisions to PAR 1469 to further reduce potential costs, without compromising the overall objectives of controlling high emitting hexavalent chromium Tier III Tanks.

Please see Responses to Comment letter 31 for a detailed response to costs calculated by Environomics.

34-2 Response: SCAQMD worked closely with MFASC and Brian Ward at AAA Plating to develop the criteria for Tier II and Tier III Hexavalent Chromium Tanks in Appendix 10. PAR 1469 includes provisions for tanks that are on the fringe of being a Tier III Tank. The addition of Tier II Tanks (which are those tanks that are expected to be between 0.2 and 0.4 mg/hour) builds into the proposed amended rule those tanks that are on the fringe of being a Tier III Tank. In addition, under subparagraph (h)(4)(D), an owner or operator has the option to test a Tier III Tank to demonstrate that the tank emissions are less than 0.2 mg/hr. If the operator can demonstrate that the tank emissions are less than 0.2 mg/hr, then the operator is not required to vent the tank to an add-on pollution control device.

34-3 Response: PAR 1469 provides up to a 10 percent difference in measuring slot velocities from the most recent source test or screening test. The structure of PAR 1469 incorporates requirements that are placed in three categories: Acceptable Measurement, Repairable Measure, and Failing Measurement. Each of the measurement categories has different requirements. For example, an operator that has a Repairable Measurement is required to repair or replace, and re-measure within 3 calendar days of the measurement and a Failing Measurement requires immediate shut down of any tanks controlled by the air pollution control device that had a failing measurement until an acceptable measurement is measured. This approach is designed to encourage the operator to make the repairs, if necessary, quickly to minimize downtime. PAR 1469 requires that the operator measures slot velocities once every 180 days. Operators are encouraged to perform periodic maintenance on air pollution control devices, including slots to ensure collection efficiencies are well maintained. In addition, additional checks of the slot velocities between the required 180 days may help in early identification of issues with the collection efficiency of the add-on air pollution controls.

34-4 Response: A provision has been added to Proposed Amended Rule 1469 in Appendix 10. It allows small tanks with a surface area less than four square feet that have a hexavalent chromium concentration less than 11,000 ppm with a temperature less than 210 degrees Fahrenheit to be exempt from the requirements of subparagraph (h)(4)(A) under certain circumstances. Staff calculated the emissions from these tanks and if the operator is operating the tank between 170 and 210 degrees Fahrenheit for two and one-half (2.5) hours per week or less, maximum potential hexavalent chromium emissions from these tanks would be less than the maximum potential emissions from tanks controlled to 0.2 mg/hour. Although no add-on pollution controls would be required for these small tanks, the operator must cover the tank pursuant to paragraph (h)(5) and will be required to maintain a data logger pursuant to paragraph (n)(3), to log the duration of time and temperature of tank to demonstrate the temperature of the tank is between 170 and 210 degrees Fahrenheit for no more than 2.5 hours per week.

PAR 1469 also allows many opportunities for smaller or lower-concentration tanks to be controlled using less expensive methods than the cost of an air pollution control (APC) system. For example, Tier II Tanks can be controlled using mechanical means (tank covers or Merlin Hoods) rather than APC systems. Where processes allows, tanks that can be run at temperatures or hexavalent chromium concentrations lower than the thresholds in Appendix 10 can apply for a permit condition to limit the tank to the appropriate parameter(s) and will be considered a Tier II Tank. In addition, passivation and chemical film tanks that are air sparged but not heated have the option of using a fluid eductor rather than air sparging and drop from Tier III to Tier I resulting in lower costs. Stripping or electropolishing tanks with hexavalent chromium tank concentrations less than 1,000 ppm are not regulated under PAR 1469, so an opportunity exists for facility operators to keep concentrations below 1,000 ppm rather than controlling them with an APC system. Finally, as suggested by MFASC, there are opportunities for process changes that will reduce hexavalent chromium tank concentrations and therefore change tank classification from Tier III to either Tier I or Tier II: for example, changing to a dilute sodium dichromate seal process.

34-5 Response: The Socioeconomic Impact Assessment (SIA) was prepared by SCAQMD staff with substantial input from the Working Group and the MFASC's economist. The cost estimates include all foreseeable cost estimates based in facility surveys, site visits, and direct communications with affected facilities. It is difficult for staff to respond to comments without having specifics regarding the facility and having the opportunity to speak with the operator and to visit the facility to better understand and assess the cost impacts that are stated in the comment. At the April 2018 Stationary Source Committee meeting, there were a number of operators that spoke on specific concerns about cost. Staff met with the operators and visited the facility to obtain specific information about their concerns and to provide solutions to their issues or clarifications about a specific provision. Staff is open to meeting with operators to discuss provisions and possible clarifications, however, additional changes to the proposed amended rule would be difficult at this point.

Regarding the comment about City permitting and delays, PAR 1469 paragraph (v)(3) includes a one-year time extension for specific circumstances beyond the control of the operator such as CEQA, city or other agency permitting requirements, delivery delays in equipment, etc.

JOSE HUIZAR
COUNCILMEMBER, 14TH DISTRICT

October 5, 2018

Mr. Neil Fujiwara
Planning, Rule Development and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765
Via email at nfujiwara@aqmd.gov

RE: Proposed Amended Rule 1469

Dear Mr. Fujiwara:

On behalf of my constituents in Los Angeles City Council District 14 and in
particular Boyle Heights, I write to request that the South Coast Air Quality Management
District (SCAQMD) strengthen its efforts to reduce hexavalent chromium emissions.
Boyle Heights is among the communities that bear a disproportionate burden of the 35-1
toxic and carcinogenic impact of hexavalent chromium. I urge a more expansive and
farther-reaching approach to governing this pernicious pollutant and to transitioning the
industry to cleaner alternatives.

I advocate a return to SCAQMD's earlier proposals to contain chromium facilities
in permanent total enclosures (PTE) with appropriate filtration. The current draft of
Proposed Amended Rule 1469 (PAR 1469) permits the building envelope of a
chromium facility to contain openings, and those openings may remain open for up to 35-2
two hours per day. The proposed regulation contemplates types of openings that could
dramatically reduce or eliminate air flow but does not require their use. The more
comprehensive approach of PTE better safeguards the community from the
dissemination of hexavalent chromium.

Plans for enforcement should include greater monitoring and oversight of
chromium facilities. While SCAQMD has suggested it may monitor toxic metal 35-3

200 NORTH SPRING STREET, ROOM 465 • LOS ANGELES, CALIFORNIA 90012
PHONE: (213) 473-7014 • FAX: (213) 847-0680
EMAIL: COUNCILMEMBER.HUIZAR@LACITY.ORG

emissions as part of proposed revisions to Rule 1480, the community lacks assurance
that it will adequately address the specific concerns of chromium facilities. Within PAR
1469 itself, the monitoring provisions are insufficient. Chromium facilities that fail
multiple source tests would be required to install a PTE system. However, source 35-3
testing would be required only every 60 or 84 months, and there is no frequency (cont'd)
requirement for ongoing emissions tests as an alternative to source testing. As a result,
the community is unacceptably left vulnerable for five to seven years between source
tests.

Finally, and perhaps most importantly, SCAQMD, through PAR 1469, related
regulations and other direct incentives, should expedite the adoption of less toxic
alternatives to hexavalent chromium. SCAQMD should establish a funded program to
help small businesses in this industry transition away from hexavalent chromium and
the toxic fume suppressants used to control it. In the absence of a funding stream, at a 35-4
minimum, education about safer methods must form part of the training and certification
requirements outlined in PAR 1469. In this way, SCAQMD could directly signal to
industry the need for an eventual elimination of hexavalent chromium emissions.

I am deeply concerned about the number of chromium facilities that put residents
of my district at risk and that are perilously close to area schools. The situation
demands a more aggressive response from SCAQMD to combat the toxic risks 35-5
surrounding the use of hexavalent chromium and to fund a transition to cleaner
alternatives.

My office and I stand ready to assist in any way that we can. Please do not hesitate to contact my Policy Director Martin Schlageter at 213-473-7014 or martin.schlageter@lacity.org if you have any questions. Thank you.

Sincerely,

José Huizar
Councilmember, District 14
City of Los Angeles

200 North Spring Street, Room 465 • Los Angeles, California 90012
Phone: (213) 473-7014 • Fax: (213) 847-0680
Email: councilmember.huizar@lacity.org

Responses to City of Los Angeles, Councilmember Jose Huizar Comment Letter (10/5/18)

35-1 Response: PAR 1469 reduces emissions of hexavalent chromium and offers protection to the communities surrounding the affected facilities. PAR 1469 incorporates the requirements of the U.S. EPA chrome NESHAP *(Chromium Electroplating: National Emission Standards for Hazardous Air Pollutants)*, as well as the California Air Resources Board (CARB) Airborne Toxic Control Measure (ATCM) for chrome plating and anodizing *(Airborne Toxic Control Measure for Chromium Plating and Chromic Acid Anodizing Facilities)*. In addition, PAR 1469 requires control of additional process tanks not controlled by the NESHAP or CARB ATCM.

Ambient monitoring and emissions testing conducted by SCAQMD staff revealed significant sources of hexavalent chromium emissions from certain non-plating tanks that were sparged (air-agitated), electrolytic, or operated at elevated temperatures. Control of these tanks, considered Tier II and Tier III Tanks, is required under PAR 1469.

In addition to addressing emissions from individual tanks at plating and anodizing facilities, PAR 1469 will reduce fugitive emissions of hexavalent chromium through best management practices, requiring a building enclosure for operations, limiting enclosure openings and specifying operational factors to limit cross drafts through a building enclosure. A permanent total enclosure (PTE) that is vented to air pollution control equipment meeting a high level of control, is required for certain situations.

PAR 1469 incorporates provisions to reduce fugitive hexavalent chromium emissions by requiring a building enclosure, including: closing roof openings within 15 feet of a Tier II or Tier III Tank; closing enclosure openings located on opposite sides of a building enclosure; and closing enclosure openings on sides of a building enclosure that directly face the nearest non-school sensitive receptor within 1,000 feet and directly face the nearest school within 1,000 feet.

35-2 Response: Early discussions regarding ambient monitoring and PTEs under negative pressure vented to HEPA filters were discussed at Working Group Meetings. Staff is working on a separate rule for ambient monitoring that will include a variety of industries and hexavalent chromium and other metal toxic air contaminants. Staff contemplated including ambient monitoring in PAR 1469, but decided that the focus should be installation of add-on pollution controls and building enclosures. Much of the discussion on PAR 1469 has been on the implementation cost, particularly the impact to small businesses. Both ambient monitoring and PTEs with negative air vented to pollution controls are expensive provisions. Staff believes that PAR 1469 is a cost conscious proposal that provides additional reductions in hexavalent chromium emissions with additional public health protection for communities affected by chrome facilities. PAR 1469 does include a conditional provision for installation of a PTE for facilities that either conduct multiple non-passing source tests or fail to shut down a tank after failing a smoke or slot velocity test. See subdivision (t) of PAR 1469 for more information regarding triggers for installation of a PTE.

The concept for the requirement for a 3.5% threshold for openings as a percentage of building envelope is based on EPA Method 204. PAR 1469 requires the lower 3.5% threshold, relative to the 5% allowance for a PTE under EPA Method 204, since building enclosures are not required to be kept under negative air pressure and vented to APC systems. PAR 1469 requires housekeeping and best management practices such as limiting cross-drafts and prohibiting openings directly facing the nearest sensitive receptor, excluding schools, within 1,000 feet and directly facing the nearest school within 1,000 feet to minimize exposure to sensitive populations in nearby communities.

35-3 Response: SCAQMD staff has initiated rule development for Proposed Rule (PR) 1480 – Air Toxic Metals Monitoring which will provide a comprehensive approach to monitoring air toxics metals at various communities near a variety of industries. Therefore, it is more appropriate to consider monitoring within the context of PR 1480 instead of within PAR 1469.

Provisions to measure the collection efficiency complement existing provisions to conduct a smoke test to ensure that air flow is not being impacted by cross-drafts, and monitor the pressure across the filter media for early identification of a breach or clog in the filter media of the air pollution control device. In addition, PAR 1469 places greater emphasis on these parameter monitoring provisions by using more than one non-passing source test within a 48-month period and failure to shut down a tank after either a failed smoke test or collection efficiency test as the triggers for installation of a permanent total enclosure.

The parameter monitoring requirements described above will ensure that emissions of hexavalent chromium are well controlled between required source tests for new and existing air pollution control systems. Therefore, the communities surrounding chromium plating and chromic acid anodizing facilities are not left vulnerable between required source tests, as the comment suggests.

35-4 Response: SCAQMD has a comprehensive suite of rules aimed at controlling emissions of hexavalent chromium and encouraging less toxic alternatives. In addition to PAR 1469, related regulations include Rule 1430 - *Control of Emissions from Metal Grinding Operations at Metal Forging Facilities*; Rule 1404 - *Hexavalent Chromium Emissions from Cooling Towers*; Rule

1469.1 - *Spraying Operations Using Coatings Containing Chromium*; and Rule 1426 - *Emissions from Metal Finishing Operations*. In addition to existing rules for the source categories described above, SCAQMD has also proposed rules to address hexavalent chromium emissions from metal melting operations (PR 1407.1 - *Control of Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations*); from heat treating (PR 1435 - *Control of Emissions from Metal Heat Treating Processes*) and from laser cutting of metals (PR 1445 - *Control of Toxic Emissions from Laser Arc Cutting*).

SCAQMD is committed to phase out hexavalent chromium and to help fund controls for the smallest facilities that are currently using fume suppressants to control emissions of hexavalent chromium. These measures include:

1. Initiate a pilot study to identify non-toxic alternatives to hexavalent chromium plating and anodizing operations and provide a report to the Stationary Source Committee within two years on possible non-toxic alternatives and rule changes;
2. Participate in CARB's upcoming rulemaking to amend the ATCM for chromium plating and anodizing and to support a statewide effort to phase-out the use of hexavalent chromium in chromium plating and chromic acid anodizing operations; and
3. If non-PFOS chemical fume suppressants are not re-certified, to work with CARB to seek funding to assist facilities in installation of pollution controls or use of non-toxic alternatives, where feasible.

PAR 1469 proposes to revisit the certification of the currently certified wetting agent chemical fume suppressants. Under the current proposal, beginning July 1, 2021, facilities may only add to a Tier III Tank a chemical fume suppressant that is certified based on a revised process conducted by SCAQMD and CARB. The date was chosen to allow sufficient time for facilities to implement alternatives, manufacturers to potentially reformulate chemical fume suppressants, and SCAQMD staff to certify the chemical fume suppressant(s).

SCAQMD remains committed to addressing emissions of hexavalent chromium from the sources and facilities identified above, to the extent possible under our purview. In addition, SCAQMD is committed to taking the described measures if non-PFOS fume suppressants are not certified.

35-5 Response: SCAQMD is also concerned with the proximity of residents and schools to plating and anodizing facilities. To that end, PAR 1469 includes limitations and restrictions for facilities located near sensitive receptors (including residences) and schools. Examples include:

5. Close any building enclosure opening that directly faces and opens towards the nearest:

   a. Sensitive receptor, excluding schools, located within 1,000 feet; and
   b. School located within 1,000 feet.

6. Ensure a new facility is not located within 1,000 feet from the boundary of a sensitive receptor, a school under construction, or any area that is zoned for residential or mixed use;
7. Expedited timeline to construct a permanent total enclosure (if triggered), if the property line of the electroplating or anodizing facility is within 500 feet of the property line of any sensitive receptor; and
8. Prior to approval of alternative compliance method for emissions control, demonstrate that the facility is at least 75 feet from a sensitive receptor.

PAR 1469 represents the most stringent control of emissions of hexavalent chromium from chromium plating and chromic acid anodizing facilities in the nation, including control of emissions directly from plating, anodizing and related tanks (i.e. point-source controls) as well as control of fugitive emissions that originate from within buildings, through limitations on building openings. Regarding the comment on phase-out of hexavalent chromium, please refer to the measures described in Response to Comment 35-4.

Subject: FW: Cost of PAR 1469 compliance
Attachments: Cost_of_PAR1469_Compliance.xls

-----Original Message-----
From: Brian Ward [mailto:brian@aaaplating.com]
Sent: Wednesday, October 10, 2018 2:00 PM
To: Neil Fujiwara <nfujiwara@aqmd.gov>
Cc: Susan Nakamura <SNakamura@aqmd.gov>; Marie Patrick (Bur) <mwpatrick@aqmd.gov>; Dr. Clark E Parker <clarkeparker@aqmd.gov>; bbenoit@cityofwildomar.org; Jenny Chavez (Bus) <jenny.chavez@lacity.org>; Michael Cacciotti (GBM) <macacciotti@yahoo.com>; Joseph Lyou (GBM) <joe@ccair.org>; Larry McCallon (GBM) <lmccallon@cityofhighland.org>; Judith Mitchell <jmitchell@aqmd.gov>; Shawn Nelson <shawn.nelson@ocgov.com>; V Manuel Perez (GBM) <vmanuelperez@rivco.org>; Dwight Robinson (GBM) <drobinson@lakeforestca.gov>; Janice Rutherford (GBM) <Janice.Rutherford@bos.sbcounty.gov>; Teresa Villegas (GBA) (Sol) <tvillegas@bos.lacounty.gov>
Subject: Cost of PAR 1469 compliance

For your consideration.

There are conflicting assessments regarding the costs of compliance with SCAQMD rule 1469 as proposed. Attached is a simple breakdown of the initial and ongoing expenses. These expenses are based on equipment quotes, where available. These expenses are very similar for all sized companies.

-Brian Ward
AAA Plating & Inspection, Inc.
(310)637-1066 ext. 224

COSTS ASSOCIATED WITH PAR 1469

ONE TIME COST FOR ONE HEPA SYSTEM

INSTALL ONE HEPA UNIT FOR ONE TANK	DUCTING	REROUTING ELECTRICAL	STRIP CURTAINS	HI SPEED ROLL UP DOOR	PERMIT FEE	SOURCE TEST	COMPANY SIZE	TOTAL ONE TIME COST	ANNUAL SALES	% FOR ONE 1 TANK	% FOR 2 TANKS
$80,000	$10,000	$12,000	$6,000	$30,000	$5,000	$15,000	LARGE	$158,000	$16,000,000	0.988%	1.975%
NOTE: A SMALLER SIZED COMPANY HAS LITTLE OR NO EFFECT ON THESE COSTS											
							MEDIUM	$158,000	$8,000,000	1.975%	3.950%
							SMALL	$158,000	$2,000,000	7.900%	15.800%

ANNUAL COST FOR ONE HEPA SYSTEM

ELECTRICITY 2 SHIFTS	FILTERS	TESTING	PERMIT FE	HOUSE-KEEPING	FILTER DISPOSA	SOURCE TEST $15,000 OVER 5 YRS	SUBTOTAL	INFLATION 2.70% PER YR		ANNUAL TOTAL COST		% FOR ONE 1 TANK	% FOR 2 TANKS
$12,600	$1,800	$1,800	$1,400	$10,000	$2,000	$3,000	$32,600	$880	LARGE	$33,480	$16,000,000	0.21%	0.419%
NOTE: A SMALLER SIZED COMPANY HAS LITTLE OR NO EFFECT ON THESE COSTS													
									MEDIUM	$33,480	$8,000,000	0.42%	0.837%
									SMALL	$33,480	$2,000,000	1.67%	3.348%

OPEN QUESTIONS:

HOW MANY NANO GRAMS OF Cr6 WILL BE REDUCED BY THE ABOVE COSTS

A REDUCTION OF ONE NANOGRAM of Cr6 PER CU. METER COMES TO $191,480 PER TANK IN YEAR ONE

$382,960 FOR 2 TANKS IN YEAR ONE

If some simple things, such as a tank cover, closing a door, hanging strip curtains, etc. can accomplish the bulk of any Cr6 reduction, it may make sense to do these simple, low cost things before spending $200,000 to $400,000.

Sheet1 Sheet2 Sheet3

Responses to AAA Plating and Inspection, Inc. Comment Email, submitted 10/10/2018

36-1 Response: Since the spreadsheet attached to the comment represents anticipated costs for the commenter's facility, it will not be representative of the range of costs for the entire universe of PAR 1469 facilities. As such, the cost profiles extrapolated from the commenter's anticipated costs for small, medium and large facilities are not expected to be representative either.

Examples of the costs that cannot be extrapolated to other facilities within the PAR 1469 universe include:

1. The cost of high speed roll-up doors is not expected to be the main compliance choice for most facilities. If an operator has a high use door, provided it is not directly facing a school or sensitive receptor, the operator may decide to keep this door open as part of the allowable 3.5% building envelope openings. In addition, there are other lower cost options such as plastic strip curtains.
2. The cost of housekeeping is not expected to increase as much as indicated in the estimate provided.
3. Inflation is not included in the Final SIA.

The analysis supplied in the comment also suggests that compliance costs do not vary by facility size. In addition, the comment used annual sales to define facility size, without providing any justification for the values chosen. This differs from the approach used in the Final SIA, where compliance costs are a function of the anticipated airflow requirements, and facility size is defined by permitted ampere-hours, rather than sales. Annual sales may not provide as meaningful correlation to facility size as permitted ampere-hours, since a facility may have significant sales from other types of operations than plating or anodizing. As an example, the comment selected $8,000,000 to define a medium size facility, while the anodizing-medium category under the Final SIA includes facilities with annual sales ranging from $1.1 million up to $168 million.

SCAQMD staff took a more refined approach in the Final SIA. Thirteen categories of facilities (e.g. anodizing – small facility) were developed and used to estimate the average number and size of air pollution control (APC) systems necessary for a particular category. Cost estimates calculated in the Final SIA are based on a survey sent to all PAR 1469 facilities with a response rate of over 50%, site visits to more than 50 facilities, 13 Working Group meetings where potential rule requirements were discussed in detail, and numerous discussions with representatives from the MFASC that focused specifically on minimizing cost impacts to chrome plating and chromic acid anodizing facilities. The Final SIA represents SCAQMD staff's best estimate at costs that are a direct result of compliance with PAR 1469, with the exception of the site-specific costs that cannot be predicted as noted in the Final SIA.

SCAQMD staff agrees with the note at the bottom of the spreadsheet. If there are low-cost measures to comply with PAR 1469, facility operators will preferentially choose those measures over installation of an air pollution control system. Please see Response to Comment 35-4 for the options available to facility operators to voluntarily change the tank parameters in order to reduce emissions of hexavalent chromium and therefore move Tier III Tanks to either Tier I or Tier II. In addition, please see the response to comment letter 31 for a discussion of cost assumptions made in the Final SIA.

From: Ostapuk, Kathryn G CIV CNRSW, N40 [mailto:kathryn.ostapuk@navy.mil]
Sent: Tuesday, October 23, 2018 11:42 AM
To: COB <COB@aqmd.gov>
Cc: Huber, Michael CIV CNRSW, N40 Env <michael.huber@navy.mil>; Dumaual, Alfred C CIV NAVFAC SW, EV <alfred.dumaual@navy.mil>
Subject: Navy comments on Proposed Amended Rule 1469

Ms. Garzaro,

On behalf of the Navy, please accept the following comments on the Proposed Amended Rule 1469 (Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations). Since the military doesn't currently have any affected operations in South Coast, we have not done an in depth analysis on the full rulemaking; however, in cursory review, we have identified some concerns with subpart m(3)(b), which states, "The owner or operator of a facility shall measure the foam blanket thickness each operating day."

1. The thickness of the foam is not uniform, so measuring foam thickness at one area of the tank may differ greatly from another and therefore is a source of large variability in readings. 37-1

2. There is a concern for the safety of the operator, as there is considerable risk for personal injury by hovering and reaching over a chrome plating tank. Based on Navy experience, foam blankets only form during the plating process. This poses considerable risk for personal injury for operators having to reach over an electrically charged chrome plating tank to take measurements. 37-2

3. Due to the non-uniform thickness of the foam layer, there is no clear reason why this needs to be done. The weekly surface tension measurement should be sufficient to demonstrate the effectiveness of the fume suppressant which according to our records are very consistent on a week-to-week basis. 37-3

Our point of contact for this is Michael Huber who can be reached at (619) 532-2303. Thank you for your consideration.

VR, Kat

Kathryn Ostapuk JD
DOD Legislative & Regulatory Affairs
Navy Region Southwest/DOD REC
619-532-2285

Responses to the United States Department of Defense Comment Email, submitted 10/23/2018

37-1 Response: The federal NESHAP for Hard and Decorative Electroplating and Chromium Electroplating and Chromium Anodizing Tanks (40 CFR Part 63, Subpart N) requires facilities to measure foam blanket thickness to demonstrate continuous compliance. The requirement to measure foam blanket thickness implements the federal NESHAP and is an existing requirement in Rule 1469. PAR 1469 cannot require a less stringent provision than the federal NESHAP or state ATCM.

37-2 Response: Please see Response to Comment 37-1.

37-3 Response: Please see Response to Comment 37-1.

ATTACHMENT H

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Socioeconomic Impact Assessment for Proposed Amended Rule 1469 ─ Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

November 2018

Deputy Executive Officer
Planning, Rule Development, and Area Sources
Philip M. Fine, Ph.D.

Assistant Deputy Executive Officer
Planning, Rule Development, and Area Sources
Susan Nakamura

Author:	Shah Dabirian, Ph.D., Program Supervisor Anthony Oliver, Ph.D., Air Quality Specialist Brian Vlasich, Air Quality Specialist
Technical Assistance	Neil Fujiwara, Air Quality Specialist Robert Gottschalk, Air Quality Specialist
Reviewed By:	Daphne Hsu, Senior Deputy District Counsel Jillian Wong, Ph.D., Planning and Rules Manager

EXECUTIVE SUMMARY

A socioeconomic analysis was conducted to assess the potential impacts of Proposed Amended Rule (PAR) 1469 on the four-county region of Los Angeles, Orange, Riverside and San Bernardino. A summary of the analysis and findings is presented below.

Elements of Proposed Amendments	The purpose of PAR 1469 is to protect public health by minimizing public exposure to hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations. PAR 1469 would require: 1) installation of air pollution control equipment on hexavalent chromium containing tanks that emit or have the potential to emit hexavalent chromium that are currently not regulated; 2) periodic source testing and parametric monitoring of air pollution control equipment; 3) building enclosures with openings that do not exceed three and a half percent of the building envelope; 4) conditional requirements for installation of Permanent Total Enclosures (PTE); 5) implementation of Best Management Practices (BMP) for all hexavalent chromium containing operations; 6) prohibiting the use of chemical fume suppressants that contain PFOS; and 7) re-certification of non-PFOS chemical fume suppressants due to potential toxicity concerns via an enhanced certification process conducted by SCAQMD and the California Air Resources Board (CARB).
Affected Facilities and Industries	SCAQMD staff has identified 115 facilities that either conduct decorative or hard chromium electroplating or chromic acid anodizing operations within SCAQMD's jurisdiction. 80 of the 115 affected facilities are located in Los Angeles County, 30 in Orange County, one in Riverside, and the remaining four in San Bernardino County. The majority of the potentially affected industries are in the manufacturing sector (NAICS 332), consistent with electroplating, plating, polishing, anodizing, and coloring facilities. This universe of facilities and tanks was determined via SCAQMD's recent surveys and equipment permitting database. Of the 115 affected facilities: • 47 facilities conduct decorative hexavalent chromium plating, • 31 facilities conduct hard hexavalent chromium plating, • 30 facilities conduct chromic acid anodizing, • four facilities conduct trivalent chromium plating only, • and three facilities conduct both chromic acid anodizing and hard hexavalent chromium plating. Data on employment and revenue were available for 104 of the 115 affected facilities. Based on this data, the total annual revenue for affected facilities is nearly $1 billion dollars and the total number of employees directly employed by affected facilities was approximately 5,300 in 2017.

Assumptions of Analysis	Many of the costs estimated in this analysis are dependent on site-specific factors and on business decisions made by facilities subject to PAR 1469. Each facility will decide how to best to comply with the rule requirements and each facility will likely use a lower-cost option, if available. For this reason, two cost scenarios are provided in this analysis. A high cost scenario, which represents the highest expected cost of compliance with the requirements of PAR 1469, and a low cost scenario, which represents the costs associated with a more likely scenario. It should be noted that both the high and low cost scenarios include conservative assumptions for installation of air pollution controls, particularly for stripping and electro polishing tanks where it is possible that these tanks will meet the requirements of a Tier I or Tier II Tank, where no add-on pollution controls will be required. Based on the type of operations performed by the each facility, 13 categories were established based on the types of facilities (hard chromium plating, decorative chromium plating, chromic acid anodizing, multiple plating or anodizing, and trivalent) and size of the facility (small, medium, large, and other, where ampere-hours could not be confirmed). **High Cost Scenario** The main requirements of PAR 1469 that have major cost impacts include the installation, operation, and maintenance of Air Pollution Control (APC) systems using High Efficiency Particulate Arrestor (HEPA) filters (point-source controls on existing and new tanks), initial source tests and screening tests, implementation of BMPs, construction of PTEs, and building modifications. Under the high cost scenario, it is assumed that a total of 103 Tier III Tanks located at 55 facilities will require APC systems, with one APC system assumed for each tank. PAR 1469 includes a provision that will require facilities to install air pollution controls, chemical fume suppressants cannot be certified. As a result, in addition to the new APC systems for Tier III Tanks, the high cost scenario also includes cost estimates for adding APC systems for existing tanks where the only control technique that is currently used are chemical fume suppressants. Beyond the 103 Tier III Tank facilities identified, there are 27 facilities with chromium electroplating and/or anodizing tanks that use chemical fume suppressants as their only form of control. Out of the 27 facilities using chemical fume suppressant controlled tanks, 12 facilities have both electroplating/anodizing tanks and Tier III Tanks. The remaining 15 facilities only have electroplating/anodizing tanks and represent some of the smallest facilities (based on revenue) in the PAR 1469 universe. Under the high cost scenario, it is assumed that a total of 130 (103+27) Tier III Tanks located at 70 facilities will require APC systems for each tank (130 total). This includes 55 facilities with existing Tier III Tanks plus 15 facilities with chemical fume suppressant controlled

	tanks that would require APC systems if no certified chemical fume suppressants are available by 2021. **Low Cost Scenario** Under the low cost scenario, it is assumed that a total of 103 tanks located at 55 facilities will require APC systems. Under this scenario it is assumed that a certified chemical fume suppressant will be available by July 1, 2021, and that the 27 facilities currently using chemical fume suppressants as their only form of control will be able to continue using a certified chemical fume suppressant rather than install APC systems. In addition, the low cost scenario assumes that where possible, facilities with higher ventilation needs would be able to vent more than one Tier III Tank into a single APC system and as a result, only 64 APC systems would be installed at 55 facilities. Below is a table summarizing the assumptions used in the high and low cost scenarios.

High Cost Scenario		Low Cost Scenario	
# of Facilities	70	# of Facilities	55
# of Tier III Tanks	130	# of Tier III Tanks	103
# of APCs	130	# of APCs	64

To estimate capital costs of APC systems, several quotes obtained from vendors indicate that unit costs ($/cfm) decrease as APC systems increase in size. Unit costs used in this analysis are shown below:

System Size (cfm)	Unit Cost
Up to 5,000	$23/cfm
5,001 to 10,000	$17/cfm
10,001 to 20,000	$14/cfm

It is anticipated that facilities would combine tanks to utilize a larger APC system instead of installing multiple APC systems, resulting in a lower overall cost.

Compliance Costs	The total average (2019 to 2035) annual compliance cost for PAR 1469 affected facilities was estimated to range from $2.64 million (low cost scenario) to $4.30 million (high cost scenario) per year, depending on the real interest rate assumed (1%-4%). The majority of the PAR 1469 compliance costs are capital, installation, and operating and maintenance (O&M) costs of APC systems. The annualized costs are estimated at $1.97 million (75%) for the low cost scenario, and $3.33 million (77%) for high cost scenario, respectively. Initial source tests and recurring screening tests are the next largest cost categories with about $0.42 million (16%) for the low cost scenario and $0.61 million (14%) for the high cost scenario, annually.

Annualized Compliance Costs (Capital Cost, Installation, O&M), All Facilities Combined		
	High Cost Scenario	**Low Cost Scenario**
New APC for Existing Tier III Tank	$738,000	$463,000
New APC for Existing Electrolytic Tank Controlled by CFS	$209,000	$0
Operating & Maintenance	$2,010,000	$1,168,000
Electrical Costs of Operating APC	$368,000	$338,000
Annualized Total	**$3,325,000**	**$1,969,000**

The total cost of installing the APC systems are estimated at $6.5 to $11.3 million, for low cost and high cost scenarios, respectively. The total average annual cost of installing the APCs are estimated at $0.46 to $0.97 million over 15 years, depending on the real interest rate assumed (1% for the low cost scenario) and (4% for the high cost scenario), respectively.

The current cost of a conventional source test consisting of three individual collection runs is estimated at $20,000. An emissions screening test, which is required every five to seven years consists of a single collection run and is estimated to cost $14,000.

It was assumed that only two facilities may trigger the requirement for installation of a PTE. The estimated total cost of the two PTEs is $184,000 for the low cost scenario, and $340,000 for the high cost scenario. The low cost scenario assumes six air changes per hour, while the high cost scenario assumes 15 air changes per hour. Costs vary by ventilation blower specifications and electrical operating costs.

The majority of the annual compliance costs ($1.55 million or 58% for the low cost scenario, and $2.49 million or 58% for the high cost scenario) is estimated to be incurred by affected facilities that belong to categories of Anodizing (Small), Anodizing (Medium), and Anodizing (Other). The majority of the annual compliance costs ($2.22 million or 84% for low cost scenario and $3.63 million or 84% for the high cost scenario) is estimated to be incurred by the sector of fabricated metal manufacturing where most of the electroplating, plating, polishing, anodizing, and coloring facilities belong.

Facility-Based Impact Analysis	A facility-based impact analysis was conducted at the request of stakeholders and is consistent with recommendations for assessment of small business impacts in a 2017 report prepared for SCAQMD by Industrial Economics, Incorporated, "Models, Methods, and Data for Estimating Small Scale and Small Business Impacts." This analysis estimates the annual cost at a facility level scale and includes sales data for individual facilities. The average cost estimates for affected facilities range from \$22,000 to \$36,000. Revenue data indicates an average annual revenue for all affected facilities of \$9.3 million, with a range of \$40,000 to \$168 million. The analysis indicates an average cost impact of 1.8% to 3.3% of revenue for all affected facilities. The facility category which bears the greatest impact is small decorative plating facilities, or Decorative (Small), which has a range of average impacts of 3.4% to 7.4% of revenue. Many of these facilities would be impacted by PAR 1469 if chemical fume suppressants are not certified and are required to install add-on pollution controls. Staff has added a provision that the Executive Officer, in consultation with CARB, may approve an alternative to a wetting agent chemical fume suppressant that is as equally effective as a certified chemical fume suppressant pursuant to paragraph (l)(2) of PAR 1469. This approach will allow facilities to use an alternative to a wetting agent chemical fume suppressant if emissions testing conducted by SCAQMD demonstrates that the alternative is as equally effective as a certified wetting agent chemical fume suppressant. The alternative to a wetting agent chemical fume suppressant would be available to only the smallest plating facilities that are currently allowed to use chemical fume suppressants. This approach will provide a cost savings given that SCAQMD staff will conduct the necessary emissions testing. No further emissions testing would be required if the operator complies with the conditions of the approval of the alternative. Recognizing the potential financial impact to smaller facilities, the adoption resolution for PAR 1469 will include a commitment that staff will seek funding to help offset the cost of add-on pollution controls if non-PFOS chemical fume suppressants cannot be certified.
Jobs and Other Socioeconomic Impacts	PAR 1469 is expected to result in approximately 37 to 63 to jobs forgone annually, on average, between 2019 and 2035 using the low and high cost scenarios are assumed, respectively. The projected jobs loss impacts represent about 0.001% of the total employment in the four-county region. The manufacturing sector (NAICS 31-33), which is projected to bear all estimated total compliance costs would have about 2 to 12 jobs forgone on average annually. The remainder of the projected reduction in employment would be across all major sectors of the economy from secondary and induced impacts of PAR 1469.

Competitiveness	It is projected that the manufacturing sector, where most of the affected facilities belong, would experience a rise in its relative cost of services by 0.0013% and 0.0022% and a rise in its delivered price by 0.0008% and 0.0012% by 2025 for the low and high cost scenarios, respectively. While these changes are relatively small, it should be noted that the delivered price change is a change in the index of all prices in the manufacturing sector. Delivered prices that a facility may charge for specific goods or services may increase at a greater rate than this, allowing incurred costs to be passed onto downstream industries and end-users.

INTRODUCTION

The proposed amendments to Rule 1469 are designed to reduce emissions from point sources that were previously not known to be significant sources of hexavalent chromium and establish additional provisions to minimize the release of fugitive hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations.

In an effort to minimize the public's exposure to hexavalent chromium, PAR 1469 would require: 1) air pollution control equipment to be installed on hexavalent chromium-containing tanks that emit or have the potential to emit hexavalent chromium; 2) conducting periodic source testing and parametric monitoring of air pollution control equipment; 3) building enclosures to meet a limit of 3.5% openings of the building envelope, which includes the area of the walls of the enclosure, the floor and the horizontal projection of the roof; 4) triggered requirements for PTE; 5) implementing BMPs for all hexavalent chromium containing operations; 6) prohibiting the use of chemical fume suppressants that contain PFOS; and 7) certification of non-PFOS chemical fume suppressants via an enhanced certification process conducted by SCAQMD and CARB due to potential toxicity concerns.

LEGISLATIVE MANDATES

The socioeconomic assessments at SCAQMD have evolved over time to reflect the benefits and costs of regulations. The legal mandates directly related to the assessment of the PAR 1469 include SCAQMD Governing Board resolutions and sections of the California Health & Safety Code (H&SC).

SCAQMD Governing Board Resolutions

On March 17, 1989, the SCAQMD Governing Board adopted a resolution that calls for an economic analysis of regulatory impacts that includes the following elements:

- Affected industries;
- Range of probable costs;
- Cost effectiveness of control alternatives; and
- Public health benefits

Health & Safety Code Requirements

The state legislature adopted legislation that reinforces and expands on the Governing Board resolutions for socioeconomic impact assessments. H&SC Section 40440.8(a) requires that a socioeconomic analysis be prepared for any proposed rule or rule amendment that "will significantly affect air quality or emissions limitations." Per H&SC Section 40440.8(b), the scope of the analysis should include:

- Type of affected industries;
- Impact on employment and the economy of the four-county region;

- Range of probable costs, including those to industries;
- Necessity of adopting, amending or repealing the rule in order to attain state and federal ambient air quality standards; and
- Availability and cost effectiveness of alternatives to the rule

Additionally, SCAQMD is required to actively consider the socioeconomic impacts of regulations and make a good faith effort to minimize adverse socioeconomic impacts. H&SC Section 40728.5, requires SCAQMD to:

- Examine the type of industries affected, including small businesses; and
- Consider socioeconomic impacts in rule adoption

Finally, H&SC Section 40920.6 requires that incremental cost effectiveness calculation be performed for a proposed rule or rule amendment that imposes Best Available Retrofit Control Technology or “all feasible measures” requirements relating to ozone, carbon monoxide (CO), oxides of sulfur (SOx), oxides of nitrogen (NOx), and their precursors. This statute does not apply to PAR 1469; moreover, cost effectiveness in terms of dollars per ton is not meaningful for air toxic regulations, since many other factors besides the amount of pollution affect the health risk such as the potency of an air toxic and the location of receptors.

AFFECTED INDUSTRIES

PAR 1469 will affect chromium electroplating and chromic acid anodizing facilities. Based on SCAQMD permitted data, internet searches, and lists of potential Rule 1469 facilities provided by industry representatives, SCAQMD staff called facility operators inquiring about their operations. SCAQMD staff visited some affected facilities if there was sufficient information indicating the facility could potentially be subject to proposed amendments of Rule 1469.

SCAQMD staff identified 115 facilities that either conduct decorative or hard chromium electroplating or chromic acid anodizing operations within SCAQMDs jurisdiction. 80 of the 115 affected facilities are located in Los Angeles County, 30 in Orange County, one in Riverside, and the remaining four in San Bernardino County.

Of the 115 affected facilities, 47 facilities conduct decorative hexavalent chromium plating, 31 facilities conduct hard hexavalent chromium plating, and 30 facilities conduct chromic acid anodizing. Four facilities conduct trivalent chromium plating only, and three facilities conduct both chromic acid anodizing and hard hexavalent chromium plating.

The majority of the potentially affected industries are in the manufacturing sector (NAICS 332), where most of the electroplating, plating, polishing, anodizing, and coloring facilities belong. Table 1 lists the type of manufacturing at affected facilities, and for each type, the facilities’ industry classification, and the number of such facilities.

Table 1:
Potentially Affected Facilities by Industry

Industry	NAICS	Number of Facilities
Fabricated Metal Manufacturing	**332**	**93**
Metal Crown, Closure, and Other Metal Stamping (except Automotive)	332119	1
Saw Blade and Handtool Manufacturing	332216	1
Machine Shops	332710	3
Bolt, Nut, Screw, Rivet, and Washer Manufacturing	332722	2
Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	332812	2
Electroplating, Plating, Polishing, Anodizing, and Coloring	332813	82
Plumbing Fixture Fitting and Trim Manufacturing	332913	2
Other Manufacturing	**333-337**	**12**
Other Industrial Machinery Manufacturing	333249	1
Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	333514	1
Cutting Tool and Machine Tool Accessory Manufacturing	333515	1
Other Measuring and Controlling Device Manufacturing	334519	2
Motor and Generator Manufacturing	335312	1
Motor Vehicle Gasoline Engine and Engine Parts Manufacturing	336310	1
Other Motor Vehicle Parts Manufacturing	336390	1
Aircraft Manufacturing	336411	1
Other Aircraft Parts and Auxiliary Equipment Manufacturing	336413	2
Showcase, Partition, Shelving, and Locker Manufacturing	337215	1
Wholesale and Retail Trade	**42, 44**	**2**
Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers	423860	1
Motorcycle, ATV, and All Other Motor Vehicle Dealers	441228	1
Professional, Scientific, and Technical and Other Services	**54, 56**	**5**
All Other Professional, Scientific, and Technical Services	541990	1
All Other Support Services	561990	4
Repair and Maintenance	**811**	**3**
Automotive Body, Paint, and Interior Repair and Maintenance	811121	1
Other Electronic and Precision Equipment Repair and Maintenance	811219	1
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	811310	1
Total		**115**

Small Businesses

SCAQMD defines a “small business” in Rule 102, for purposes of fees, as one which employs 10 or fewer persons and which earns less than $500,000 in gross annual receipts. SCAQMD also defines “small business” for the purpose of qualifying for access to services from SCAQMD’s Small Business Assistance Office as a business with an annual receipt of $5 million or less, or with 100 or fewer employees. In addition to SCAQMDs definition of a small business, the federal Clean Air Act Amendments (CAAA) of 1990 and the federal Small Business Administration (SBA) also provide definitions of a small business.

H&SC Section 42323 classifies a business as a “small business stationary source” if it: (1) is owned or operated by a person who employs 100 or fewer individuals. (2) Is a small business as defined under the federal Small Business Act (15 U.S.C. Sec. 631, et seq.). (3) Emits less than 10 tons per year of any single pollutant and less than 20 tons per year of all pollutants. The SBA definitions of small businesses vary by six-digit North American Industrial Classification System (NAICS) codes. In general terms, a small business must have no more than 500 employees for most manufacturing industries, and no more than $7 million in average annual receipts for most nonmanufacturing industries.[1] A business in the industry of electroplating, plating, polishing, anodizing, and coloring (NAICS 322813) with fewer than 500 employees is considered a small business by SBA.

Out of the 115 affected facilities within SCAQMD’s jurisdiction, information on sales and employees for 104 facilities were available, based on 2017 Dun and Bradstreet data.[2] Under SCAQMD’s definition of small business, there are 25 small businesses affected by PAR 1469. Using the SBA definition of small business for the manufacturing sector, all of the 104 facilities are considered small businesses. Under the CAAA definition of small business, all of the 104 facilities are considered small businesses assuming that all the facilities without annual emission data emit less than 10 tons of VOC or NOx.

COMPLIANCE COSTS

For facilities subject to PAR 1469, incremental costs were estimated for the capital outlays and related expenditures—including operations and maintenance (O&M), building enclosures with openings that do not exceed three and a half percent of the building enclosure envelope, permanent total enclosures, initial source tests for new APC systems as well as source tests for existing APC systems and screening tests for existing electrolytic tanks, incremental costs of permit application fees, and implementation of BMPs. The capital outlays would include APC systems fitted with HEPA filters.

All the costs discussed in this section are expressed in 2017 dollars. For the purpose of projecting future compliance costs, it is assumed that these costs would remain the same in the foreseeable future, with any increase being a result of inflation. Additionally, while it is considered in this analysis that all estimated costs would be borne by the affected facilities, the compliance costs could potentially be passed on to downstream customers of electroplating and anodizing services and products.

Staff has used the following sources to estimate costs of capital, installation, operating and maintenance of APC systems, source tests, screening tests, and BMPs:

1. Vendor quotes obtained by SCAQMD staff;
2. Vendor quotes obtained by Environomics, a consultant hired by the Metal Finishing Association of Southern California (MFASC);
3. Actual costs from a recent APC system installation;

[1] The latest SBA definition of small businesses by industry can be found at http://www.sba.gov/content/table-small-business-size-standards.
[2] Dun & Bradstreet Enterprise Database, 2017.

4. Plating/anodizing facility personnel discussions with vendors or engineers;
5. Cost estimates from the 2006 amendment to the CARB Airborne Toxic Control Measures (ACTM) for chromium electroplating. https://www.arb.ca.gov/toxics/atcm/chroatcm.pdf; and
6. Vendor quotes from consultants of Montrose Environmental Group, Inc. http://montrose-env.com/

Many of the costs estimated in this analysis are highly dependent on site-specific factors and on business decisions made by facilities subject to PAR 1469. For example, many facilities have more than one tank be controlled under the proposed amendments. It is more cost effective to control multiple tanks using one APC system, due to reduced equipment (i.e. ductwork, blower, filter housing, etc.) as well as reduced installation, permitting, and source testing costs. However, it is often not possible to control more than one tank with an APC system because tanks that must be controlled are located in different buildings or located too far apart to use one APC system. Each facility will decide how to best to comply with the proposed requirements and an assumption is that each facility will likely use the lowest-cost option.

For this reason, two cost scenarios are provided in this analysis. A high cost scenario, which represents the highest expected cost of compliance with the requirements of PAR 1469, and a low cost scenario, which represents the costs associated with a more reasonable scenario.

It is important to note that when conducting this cost analysis, every effort was made to represent costs as realistically as possible, given that many factors would ultimately dictate what price a business will pay to ensure compliance with PAR 1469 requirements.[3] The estimated cost for each line item was either represented by an industry average or a reasonable range, based on the information and data available. The procedure and assumptions for each cost scenario are discussed below. The total cost includes overall costs over 15 years for the low and high cost scenarios. The average annual compliance cost is estimated over the years 2019-2035. The average annual compliance cost of PAR 1469 is estimated to range from $2.64 million (low cost scenario) to $4.30 million (high cost scenario) per year, depending on the real interest rate assumed (1%-4%).[4] Table 2 presents total and average annual compliance costs of PAR 1469 by requirement categories.

As presented in Table 2, the main requirements of PAR 1469 that have cost impacts for affected facilities would include installation of APC systems, O&M costs of APC systems, source test and

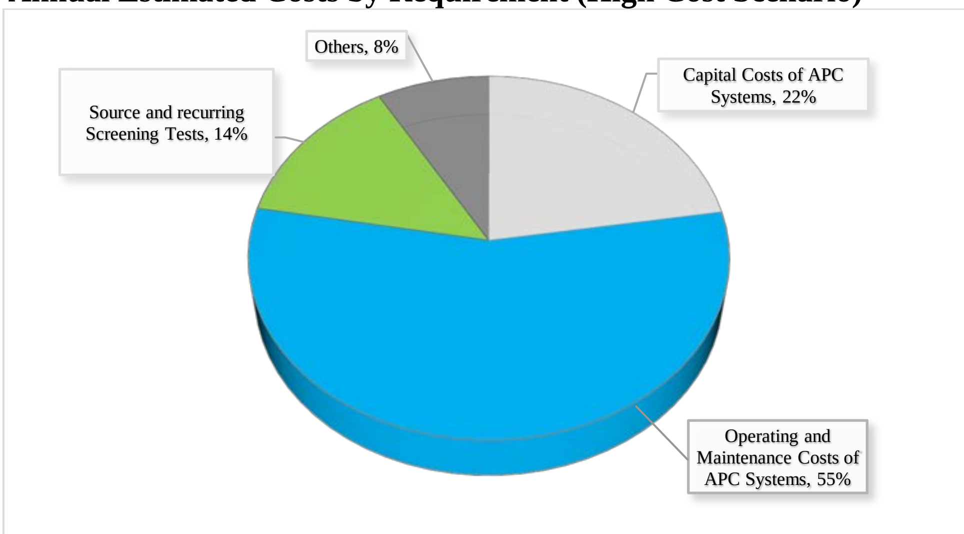
[3] SCAQMD staff worked with Metal Finishing Association of Southern California (MFASC) consultants to develop cost assumptions for PAR 1469.

[4] In 1987, SCAQMD staff began to calculate cost-effectiveness of control measures and rules using the Discounted Cash Flow method with a discount rate of 4%. Although not formally documented, the discount rate is based on the 1987 real interest rate on 10-year Treasury Notes and Bonds, which was 3.8%. The maturity of 10 years was chosen because a typical control equipment life is 10 years; however, a longer equipment life would not have corresponded to a much higher rate- the 1987 real interest rate on 30-year Treasury Notes and Bonds was 4.4%. Since 1987, the 4% discount rate has been used by SCAQMD staff for all cost-effectiveness calculations, including BACT analysis, for the purpose of consistency. The incremental cost reported in this assessment was thus annualized using a real interest rate of four percent as the discount rate. As a sensitivity test, a real interest rate of one percent will also be used, which is closer to the prevailing real interest rate.

screening test costs, installation of PTEs and upgrading building enclosures, and implementing BMPs.

The majority of PAR 1469 compliance costs are capital, installation, and O&M costs of APC systems. The annualized compliance costs are estimated at $1.97 million (75% of total costs) for low cost scenario, and $3.33 million (77%) for high cost scenario, respectively. Initial source tests and recurring screening tests are the next largest cost categories with about $0.42 million (16%) for the low cost scenario and $0.61 million (14%) for the high cost scenario, annually.

Figure 1:
Annual Estimated Costs by Requirement (High Cost Scenario)



The cost impacts for affected facilities from PAR 1469 compliance are from one-time costs and annual recurring costs. The one-time costs would include capital and installation of APC systems, initial source costs, permanent total enclosures, building modifications, permit application fees, and BMPs. Annual recurring cost estimates include costs of APC systems, annual costs of electrical power to run new ventilation blowers, annual monitoring costs, annual permit renewal fees, and costs of periodic source tests.

Table 2:
Projected Total and Average Annual Compliance Cost of PAR 1469 by Requirement Categories

	Total Cost Low Cost Scenario (From 2019 to 2035)	Total Cost High Cost Scenario (From 2019 to 2035)	Annual Cost at 1% Real Interest Rate (Low Cost Scenario)	Annual Cost at 4% Real Interest Rate (High Cost Scenario)
One-Time Costs				
Implementing BMPs**	$654,000	$654,000	$68,000	$76,000
Building Modifications*	$164,000	$272,000	$11,000	$18,000
Capital Cost of New APC Systems for Existing Tier III Tanks*	$6,539,000	$8,584,000	$463,000	$738,000
Capital Cost for New APC Systems for Existing Electrolytic Tanks Controlled by Chemical Fume Suppressants*	$0	$2,744,000	$0	$209,000
Cost of Permanent Total Enclosure*	$184,000	$340,000	$11,000	$24,000
Initial Source Testing for New APC Systems for existing Tier III Tanks*	$1,270,000	$1,937,000	$74,000	$114,000
Initial Source Testing for New APC Systems for Existing Electrolytic Tanks controlled by Chemical Fume Suppressant*	$0	$540,000	$0	$32,000
Initial Source Testing for Existing APC Systems for Existing Electrolytic Tanks*	$1,396,000	$1,396,000	$82,000	$82,000
Permitting Costs for New APC Systems for Existing Tier III Tanks*	$280,000	$420,000	$20,000	$36,000
Permitting for New APC Systems Serving Existing Electrolytic Tanks controlled by chemical Fume suppressants*	$0	$118,000	$0	$8,000
Fluid Eductors**	$30,000	$42,000	$3,000	$5,000
Recurring Costs				
Screening Test (Recurring) Cost for Existing Electrolytic and Tier III Tanks	$2,286,000	$2,286,000	$147,000	$147,000
Screening Test (Recurring) Cost for Tier III Tanks	$1,901,000	$3,071,000	$121,000	$196,000
Screening Test (Recurring) Cost for New APC Systems for Electrolytic Tanks Controlled by Chemical Fume Suppressants	$0	$540,000	$0	$35,000
Annual Monitoring Costs	$180,000	$265,000	$338,000	$368,000
Operating and Maintenance Costs for APC Systems	$17,655,000	$30,680,000	$1,168,000	$2,010,000
Annual Operating (Electrical) Costs	$5,174,000	$6,092,000	$338,000	$368,000
Annual Permit Renewal Costs for Tier III Tanks	$1,904,000	$2,496,000	$118,000	$183,000
Total* **	**$39,617,000**	**$62,477,000**	**$2,636,000**	**$4,299,000**

*Cost is annualized over 15 years of expected equipment life
** Cost is annualized over 10 years of expected equipment life (Splash Guards, Barriers, Pressure Gauge)
***Total values may not add up due to rounding.

Based on the type of operations performed by each facility, 13 categories were established based on the type of facilities (hard chromium plating, decorative chromium plating, chromic acid anodizing, multiple, trivalent) as well as the size of the facility (small, medium, large, other based on permitted ampere-hours).

Table 3 presents the total and average annual costs of PAR 1469 by type of operation. The majority of the annual compliance costs ($2.49 million for high cost scenario, $1.55 million for low cost scenario, both approximately 58% of total costs across all facility categories) is estimated to be incurred by affected facilities that belong to categories of Anodizing (small), Anodizing (medium), and Anodizing (other). Facility categories denoted by "Other" refers to facilities with a permit still under review at the time of the socioeconomic impact assessment, and ampere-hours information was not available to define the size of the operation.

Table 3:
Projected Total and Average Annual Compliance Cost of PAR 1469 by Operation Category
(2017 Dollars)

Operation Category	Total Cost Low Cost Scenario	Total Cost High Cost Scenario	Annual Cost at 1% Real Interest Rate (Low Cost Scenario)	Annual Cost at 4% Real Interest Rate (High Cost Scenario)
Anodizing (Small)	$9,150,000.00	$13,427,000.00	$609,000.00	$924,000.00
Anodizing(Medium)	$12,381,000.00	$19,953,000.00	$824,000.00	$1,373,000.00
Anodizing (Other*)	$1,742,000.00	$2,824,000.00	$116,000.00	$194,000.00
Decorative (Small)	$4,908,000.00	$10,490,000.00	$326,000.00	$722,000.00
Decorative (Medium)	$2,549,000.00	$3,859,000.00	$170,000.00	$266,000.00
Decorative (Large)	$236,000.00	$236,000.00	$16,000.00	$16,000.00
Decorative (Other)	$181,000.00	$182,000.00	$12,000.00	$13,000.00
Hard (Small)	$186,000.00	$351,000.00	$12,000.00	$24,000.00
Hard (Medium)	$548,000.00	$567,000.00	$36,000.00	$39,000.00
Hard (Large)	$5,803,000.00	$7,830,000.00	$386,000.00	$539,000.00
Hard (Other)	$135,000.00	$135,000.00	$9,000.00	$9,000.00
Multiple (Large)	$1,782,000.00	$2,608,000.00	$119,000.00	$179,000.00
Trivalent (Other)	$14,000.00	$15,000.00	$1,000.00	$1,000.00
Total	**$39,617,000**	**$62,477,000**	**$2,636,000**	**$4,299,000**

*"Other" refers to facilities for which the permit was still under review and ampere-hours data was not yet available at the time of analysis.

Table 4 presents the compliance cost of PAR 1469 by industry types. The majority of the annual compliance costs ($2.22 million or 84% for low cost scenario and $3.63 million or 84% for the high cost scenario) of PAR 1469 is estimated to be incurred by the sector of fabricated metal manufacturing where most of the electroplating, plating, polishing, anodizing, and coloring facilities belong.

Table 4:
Projected Total and Average Annual Compliance Costs by Industry for Affected Facilities (2017 Dollars)

Industry that Typically Uses the Equipment	NAICS Codes	Number of Facilities	Projected Annual Compliance Costs			
			Total Cost Low Cost Scenario	Total Cost High Cost Scenario	Annual Cost Low Cost Scenario 1% Real Interest Rate	Annual Cost High Cost Scenario 4% Real Interest Rate
Wholesale trade	42	2	$869,000	$1,384,000	$58,000	$97,000
Professional, scientific, and technical services	54	1	$45,000	$45,000	$3,000	$3,000
Fabricated metal product manufacturing	332	92	$33,373,000	$52,724,000	$2,219,000	$3,631,000
Machinery manufacturing	333	3	$597,000	$915,000	$40,000	$63,000
Computer and electronic product manufacturing	334	2	$229,000	$480,000	$15,000	$30,000
Electrical equipment and appliance manufacturing	335	1	$40,000	$76,000	$2,000	$4,000
Furniture and related product manufacturing	337	1	$2,000	$2,000	$0	$0
Administrative and support services	561	4	$921,000	$1,347,000	$62,000	$87,000
Repair and maintenance	811	3	$597,000	$915,000	$40,000	$63,000
Motor vehicles, bodies and trailers, and parts manufacturing	3361-3363	2	$506,000	$823,000	$34,000	$57,000
Other transportation equipment manufacturing	3364-3369	3	$2,393,000	$3,720,000	$161,000	$262,000
Retail trade	44-45	1	$45,000	$45,000	$3,000	$3,000
Total		**115**	**$39,617,000**	**$62,477,000**	**$2,636,000**	**$4,299,000**

One-time Costs of PAR 1469 Compliance

- **Implementing BMPs**

High Cost Scenario:

- Drip trays between electroplating/anodizing tank and adjacent tanks
- Tank labeling on each electroplating, anodizing and Tier III tank
- Barriers – 1 barrier at 111 affected facilities (trivalent facilities are not subject to this requirement)
- Instrumentation for existing APC systems – 2 static pressure gauges, 1 magnahelic, and 1 hot-wire anemometer for each existing APC system
- Cost: $654,000

Low Cost Scenario:

- Assumptions and cost are same as in High Cost scenario
- Cost: $654,000

Installation of Drip Trays

PAR 1469 requires installation of drip trays between each electroplating or anodizing tank and adjacent tanks for facilities with automated lines. A cost of $200 per drip tray is assumed, in addition to 5 hours of labor (performed by plating shop personnel) to install these drip trays. According to the industry representative, labor costs are assumed to be at an hourly wage of $22 per hour, which represents the average labor rate at the affected facilities. The number of drip trays is assumed to be equivalent to the number of existing Tier III Tanks and electrolytic tanks at 111 facilities, distributed evenly among all facilities. This results in an estimated cost of $99,470 for installation of drip trays. This value is used for both the high and low cost scenario. Inclusion of this cost is a conservative assumption, as many facilities with automated lines currently have drip trays.

Installation of Labels on Tanks

PAR 1469 requires clear labeling of each tank within the tank process area with a tank number or other identifier, SCAQMD permit number, bath contents, maximum concentration (ppm) of hexavalent chromium, operating temperature range, and any agitation methods used. A cost of $25 per label is conservatively assumed, though staff has observed in site surveys that most facilities already label tank information using handwritten or printed paper placards. Any missing label information could be added to the existing label or revised with the required information. The number of new and revised labels is assumed to be equivalent to the number of existing Tier I, Tier II, Tier III, and electrolytic tanks at 111 facilities, distributed evenly among all facilities. This results in an estimated cost of $10,550 for installation of labels on tanks. This value is used for both the high and low cost scenario.

Installation of Barrier between Buffing, Grinding or Polishing Area and Tank Area

PAR 1469 requires separation of the buffing, grinding, or polishing area within a facility from the chromium electroplating or chromic acid anodizing operation. The proposal allows the barrier to be plastic strip curtains. Therefore, staff assumes plastic strip curtains will be used to comply with this requirement, due to their relatively low cost. A capital cost of $1,000 plus an additional labor cost of 20 hours to install this barrier is assumed for each facility. The total estimated cost to comply with this BMP is $165,000. This value is used for both the high and low cost scenario. Inclusion of this cost scenario is a conservative assumption, as many facilities currently conduct buffing, grinding and polishing activities in a separate room from electroplating or anodizing activities.

Installation of Parameter Monitoring Instrumentation on existing APC Systems

PAR 1469 requires installation of instrumentation to monitor pressure and airflow on existing APC systems. This instrumentation includes a static pressure gauge installed on the push side of a push-pull manifold serving a Tier III or electrolytic tank, a static pressure gauge or volume flow meter installed in the collection manifold of an APC system, and a differential pressure gauge installed across each stage of control in an APC system. For example, the differential pressure monitoring locations required by the proposal include across the mesh pads, pre-filters, and the HEPA filters. In this instance, three differential pressure monitoring devices would be required per APC system. Costs assumed for this requirement include $200 for a static pressure gauge and $1,000 for a differential pressure gauge. Both costs include installation.

Instrumentation for parameter monitoring is included in the unit cost for new APC systems serving existing Tier III Tanks. Therefore, no additional costs are assumed for new APC systems installed either for Tier III Tanks or for APC systems installed in the event that no chemical fume suppressant is certified by July 2021. For existing tanks, most permits already include a requirement to monitor differential pressure either across each stage of control or over all stages of control collectively. Therefore, APC systems for existing tanks already have at least one differential pressure monitor currently installed. Staff does not believe many APC systems are currently equipped with a static pressure gauge either on the push side of a push-pull ventilation system or within the collection manifold. To be conservative, this estimate includes two static pressure monitors and two differential pressure monitors. The APC systems for existing electroplating and anodizing tanks must have parameter monitoring instrumentation. The estimated cost of meeting this BMP requirement is estimated at $316,000. This value is used for both the high and low cost scenario.

The total one-time cost of the above BMPs is estimated at $654,000 for both low and high cost scenarios.

- **Building Modification Costs**

High Cost Scenario:

- Four openings per facility at 111 affected facilities
- 12 facilities modify existing openings to meet 3.5% enclosure envelope
- Construction based on 1,000 ft^2 of open area
- Cost: $272,000

Low Cost Scenario:

- Four openings per facility at 111 affected facilities
- 12 facilities modify existing openings to meet 3.5% enclosure envelope
- Construction based on 400 ft^2 of open area
- Cost: $164,000

PAR 1469 requires building enclosures that meet a limit of 3.5% enclosure openings as a percentage of the building envelope, which includes the area of the walls of the enclosure, the floor and the horizontal projection of the roof. Facilities with openings in excess of this limit have many options for compliance including enclosing openings by installing doors, windows and wall sections. Most facilities currently meet the proposed limit. In addition, PAR 1469 requires facilities to enclose all roof openings that are within 15 feet of Tier II or Tier III Tanks. It is estimated that a maximum of four openings per facility may need to be closed. Simple and cost-effective solutions are readily available to close these openings. An estimate of $200 per opening is used to calculate closure costs. Existing shop personnel are expected to conduct this work. The total cost for building enclosure modifications is estimated to be $92,000, inclusive of materials and labor.

Pursuant to the Ongoing Compliance Status & Emissions Report in Appendix 3, the owner/operator must identify enclosure openings that contribute to the 3.5% building allowance. The closure of roof openings within 15 feet of a Tier II or Tier III Tank will reduce the percentage of openings as a function of the building envelope.

Staff has learned of two situations where a facility may construct in order to meet the 3.5% opening requirement. In a survey of nine facilities, one had large openings high up in the walls that need to be enclosed to meet the 3.5% allowance. In a second situation, a facility has a plating operation in the middle section of a very large building. The facility prefers to keep the doors at either end of the building open and instead would construct interior walls that enclose the plating operation to meet requirements. This solution may require the facility to ventilate the area that houses the plating operation. It can be argued that construction in the second example is not driven by PAR 1469 requirements but is instead a business decision. In the survey mentioned, one out of nine facilities will be required to construct building enclosure modifications as a direct result of PAR 1469 requirements. For this analysis, these limited survey results are conservatively extrapolated to the PAR 1469 universe of 111 facilities that conduct hexavalent chromium plating or anodizing, giving an estimate of 12 facilities that may be required to perform some kind of construction.

It is not possible to predict how the facilities will close existing openings. PAR 1469 allows a number of solutions such as permanently sealing existing openings with materials such as light-gauge steel or aluminum siding, closing doors and windows as allowed under the proposal (with two hours per day allowance for ingress and egress of equipment and personnel), installation of plastic strip curtains, or other materials on existing openings in lieu of closing doors and windows. Cost for these solutions are estimated as follows:

> Adding to a section of a wall, including the cost to add panels to a partial enclosure that creates a building enclosure thereby meeting 3.5% limit for openings as a percentage of building envelope: $44,000 for 100 feet section of wall 24 feet high. The wall is assumed to have a steel structure with a light gauge steel sheathing, one roll up door, and two entry doors. The unit cost of the wall was estimated at $18.33 per square foot.[5]
>
> Plastic strip curtains cost an average of $7 in the size ranges expected for building enclosure applications (eight feet by three feet for personnel access doors; 12 feet by 16 feet for equipment access doors. An additional 50% is added for installation costs, giving an estimated unit cost of $10.50 per square foot.[6]

Assuming half of building enclosures will be closed using solid wall surfaces and half will use plastic strip curtains results in an average cost of approximately $15 per square foot. For the low cost scenario, it is assumed that up to 400 square feet of surface area will be enclosed, for an estimate of $6,000, and for the high cost scenario, it is assumed that 1,000 square feet of surface area will be enclosed, giving an estimated $15,000. For the 12 facilities estimated to be impacted by this requirement the total cost will range from $72,000 to $180,000. Costs to comply with the enclosure requirements for facilities within 1,000 feet of a school or sensitive receptor are accounted for in the costs to meet the 3.5% limit for openings described above.

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[5] National Building Cost Manual 2008. Costs were updated to current dollars.

[6] https://www.grainger.com/category/strip-doors/strip-doors-replacement-strips-and-hardware/dock-equipment/material-handling/ecatalog/N-18lo?okey=plastic+strip+curtains&mkey=plastic+strip+curtains&refineSearchString=plastic+strip+curtains&NLSCM=14&EndecaKeyword=plastic+strip+curtains&searchBar=true&searchRedirect=plastic+strip+curtains&sst=subset

- **Capital Cost of New APC Systems for Existing Tier III Tanks**

High Cost Scenario:	
	• 103 new APC systems at 70 affected facilities • One APC system per Tier III tank • Cost: $8,584,000
Low Cost Scenario:	
	• 64 new APC systems at 55 affected facilities • Multiple Tier III Tanks per APC system • Cost: $6,539,000

PAR 1469 would require affected facilities to install APC systems on hexavalent chromium-containing tanks that emit or have the potential to emit hexavalent chromium from their Tier III Tanks. In addition, Tier III Tanks that are currently exempt under Rule 219 often do not have tank parameters (i.e. size, applied heat or air sparging, chromium concentration within the bath) described in their SCAQMD permits. As a result, staff does not have data on all Tier III tanks affected by PAR 1469. To better estimate the number of Tier III Tanks affected, staff administered two surveys requesting data from affected facilities; one administered by SCAQMD compliance staff (Phase I), and the other completed by the owner or operator of a facility (Phase II).

Phase I of the survey consisted of information regarding tanks, housekeeping procedures, best management practices, and existing control techniques. Of the 115 affected facilities that were contacted, a total of 62 responses were received. Phase II was conducted mainly to obtain information from additional facilities that could be affected by the amendments as well as financial data (annual sales and number of employee) of all affected sources subject to the PAR 1469.

25 of the 62 survey responses received included the size and composition of Tier III Tanks. Data from these responses were extrapolated to estimate the number and size of Tier III Tanks at facilities that did not submit a survey response. In order to establish these estimates, 13 facility categories were created, based on the type of operations performed by the facility (hard chromium plating, decorative chromium plating, chromic acid anodizing, multiple operations, and trivalent) as well as the size of the facility (small, medium, large, and other). Facility size designations were based on the number of ampere-hours allowed in a facility's permit. Small facilities are those permitted for less than 500,000 ampere-hours/year, medium facilities are those permitted for 500,001 to 10,000,000 ampere-hours/year, and large facilities are those permitted above 10,000,000 ampere-hours/year. Facilities designated as "Other" had a permit under review at the time of the analysis and ampere-hours could not be confirmed. These categories are shown below:

1. Chromic Acid Anodizing (Small)
2. Chromic Acid Anodizing (Medium)
3. Chromic Acid Anodizing (Other)
4. Decorative Chromium Plating (Small)
5. Decorative Chromium Plating (Medium)

6. Decorative Chromium Plating (Large)
7. Decorative Chromium Plating (Other)
8. Hard Chromium Plating (Small)
9. Hard Chromium Plating (Medium)
10. Hard Chromium Plating (Large)
11. Hard Chromium Plating (Other)
12. Multiple Plating or Anodizing Operations (Large)
13. Trivalent (Other)

It should be noted that facilities designated as small for the purpose of estimating costs do not necessarily qualify them as a small business under the small business definition.

Tank estimates and associated costs are based on the number of survey responses within each category as described above, scaled to the total number of facilities with Tier III Tanks within that category. Average costs were assigned to each facility as a percentage of the total costs within that category for a particular capital cost or activity.

High Cost Scenario for APC Systems

There are a total of 27 facilities with chromium electroplating and/or anodizing tanks that are currently controlled only by chemical fume suppressants. Out of these 27, 12 facilities have both electroplating/anodizing tanks and Tier III Tanks. The remaining 15 facilities only have electroplating/anodizing tanks and represent some of the smallest facilities (based on amp-hours) in the PAR 1469 universe. Under the high cost scenario, it is assumed that a total of 130 tanks (i.e. 103 Tier III Tanks and 27 tanks controlled by fume suppressants) located at 70 facilities (i.e. 55 facilities with existing Tier III Tanks and 15 facilities with fume suppressant controlled tanks) will require APC controls. Under this scenario, one APC system is assumed for each tank.

Under a high cost scenario, an additional 27 APC systems are assumed to be installed at 27 facilities if no certified chemical fume suppressants are available by July 2021. 12 of these facilities already have Tier III Tanks that also need APCs, and were previously counted. The remaining 15 facilities do not have Tier III Tanks now and would need a new APC after 2022. The total APC system counts under the high cost scenario is therefore 130 (103+27) systems at 70 (55+15) facilities.

Low Cost Scenario for APC Systems

Under the low cost scenario, it is assumed that a total of 103 tanks located at 55 facilities will require APC controls. Under this scenario it is assumed that a certified chemical fume suppressant will be available by 2021, and that the 27 facilities currently using chemical fume suppressants as their only form of control will be able to use a certified chemical fume suppressant rather than installing APC systems. In addition, the low cost scenario assumes that where possible, facilities with higher ventilation needs will be able to vent more than one Tier III Tank into a single APC system and as a result, only 64 APC systems would be installed at 55 facilities. Table 5 presents the summary of the estimated number of Tier III Tanks and associated APC systems for both scenarios.

Table 5:
Affected Facilities and Tanks

High Cost Scenario		Low Cost Scenario	
# of Facilities	70	# of Facilities	55
# of Tier III Tanks	130	# of Tier III Tanks	103
# of APCs	130	# of APCs	64

SCAQMD staff used a number of sources to estimate capital and annual costs for new air pollution control systems, including estimates from the 2006 CARB chrome plating ATCM. These cost estimates were updated to 2017 dollars. Costs from recent quotes correlate very well with updated costs from the CARB ATCM. After review of the available cost data, the updated CARB ATCM costs represented the most conservative assumptions. All raw costs were converted to unit costs and are presented in dollars per cubic feet per minute (cfm) of APC system airflow. Three system sizes were estimated, including 5,000 cfm, 10,000 cfm, and 20,000 cfm. It was assumed that 150 cfm of airflow is required to control each square foot of tank surface area. This assumption was used both for electroplating/anodizing tanks as well as for Tier III Tanks. The three system sizes of 5,000 cfm, 10,000 cfm, and 20,000 cfm correspond to control of tanks with a surface area of approximately 33 square feet, 67 square feet, and 133 square feet, respectively.

All cost estimates are assumed to include the following:

1. Engineering and system design
2. Ventilation ductwork
3. Blower motor and housing
4. Control housing
5. Control media (i.e. mesh pads, pre-filters, HEPA filters, etc.)
6. Instrumentation required under PAR 1469, including:
    a. Static pressure gauge on push side of push/pull system;
    b. Static pressure gauge or volumetric flow meter at collection manifold; and
    c. Differential pressure gauge measuring pressure drop across each stage of control.
7. Installation
8. Required electrical upgrades
9. Sales tax
10. Set-up and commissioning

Quotes obtained from vendors indicate that unit costs decrease as APC systems increase in size. Unit costs used in this analysis are as follows:

System Size (cfm)	Unit Cost Estimate (per cfm)
Up to 5,000	$23
5,001 to 10,000	$17
10,001 to 20,000	$14

Unit cost estimates do not include source testing or permitting. However, the analysis provides separate line items for source testing and permitting. In addition, unit cost estimates do not include costs that the city or municipality may impose for building inspections, approvals and upgrades to meet local building codes for the facility. For example, a facility may need to meet the current building code or seismic requirements. However, no costs were assumed for items such as building inspections, approvals, and upgrades imposed by the city or municipality, due to the uncertain nature of these costs. Each city or municipality may have different requirements relative to installation of APC systems, and staff cannot reasonably predict these costs. Therefore, actual costs may be higher for facilities with older buildings that need to be brought up to current codes.

Staff assumed that most tanks will require an APC system sized to control emissions from that individual tank. The assumption of one APC system per tank was made after consultation with Environomics and after numerous SCAQMD staff visits to facilities subject to Rule 1469. This is a conservative assumption as staff believes there are many opportunities for a plating or anodizing facility to realize savings under one or more of the following scenarios:

1. Venting multiple tanks to a common APC system, where these tanks are located in proximity to each other;
2. Moving tanks that are not currently located in proximity with each other closer together and venting to a common APC system; or
3. Venting an existing tank required to be controlled under PAR 1469 into an existing APC system, where capacity of that system allows.

It should be noted that there is a financial incentive for combining multiple tanks into a common APC system, relative to installing a single APC system for each tank, in terms of reduced unit cost as well as reduced source testing, permitting, and annual permit renewal fee costs. Therefore, actual costs will probably be lower for many facilities than costs calculated for the high cost scenario.

For the high cost scenario, the unit cost was assumed to be $23 per cfm for most APC systems, which correlates with the smallest APC system size. A unit cost of $17 per cfm was assumed for tanks requiring an APC system of up to 10,000 cfm. For the low cost scenario, it was assumed that 55 facilities that are required to control 103 tanks under PAR 1469 would combine tanks to create the largest possible system, resulting in a lower overall cost. It is further assumed that installation of new APCs systems for Tier III Tanks starts in 2019.

The total cost of installing the APC systems is estimated at $6.5 to $11.3 million, for low cost and high cost scenarios, respectively. The total average annual cost of installing the APCs are estimated at $0.46 to $0.97 million over 15 years, depending on the real interest rate assumed (1% for the low cost scenario and 4% for the high cost scenario, respectively).

Based on the approach described, staff initially estimated 137 existing Tier III Tanks at 55 chromium plating and anodizing facilities would need to be controlled as a result of PAR 1469 requirements. It was assumed that facilities will use a lower cost option rather than install APC systems where available. This could be the case for tanks that are currently air sparged, such as chem-film and passivation tanks. By removing air sparging, these tanks become Tier I Tanks. This analysis assumes these tanks will be retrofitted with fluid eductors, rather than continuing to be air sparged, resulting in much a lower overall cost to the facility. There are an estimated 20 chem film and passivation tanks that fall under this assumption, all located at facilities within Chromic Acid Anodizing (Medium) facilities.

Of the Tier III Tanks, 46 tanks in the Decorative Chromium Plating (Small), Decorative Chromium Plating (Medium) and Hard Chromium Plating (Large) facility categories are used to conduct either electropolishing or reverse plating (i.e. stripping) operations. Liquid sampling was conducted at 10 facilities to determine hexavalent chromium concentrations from these tanks. Tanks with hexavalent chromium concentrations in excess of 1,000 ppm are considered Tier III Tanks under PAR 1469, and tanks with concentrations under 1,000 ppm are not regulated. Sample results of tanks under 1,000 ppm within each facility category were scaled by the number of stripping/electropolishing tanks within that facility category to determine the number of tanks not expected to need controls. After adjusting for eductors used in passivation and chem film tanks, and for stripping/electropolishing tanks, the adjusted number of new APC systems serving existing Tier III Tanks is 103 for the high cost scenario and 64 for the low cost scenario.

- **Capital Cost for New APC Systems for Existing Electrolytic Tanks Controlled by Chemical Fume Suppressants Only**

High Cost Scenario:

- 27 new APC systems
- Chemical fume suppressants will not be certified prior to 2021
- Cost: $2,744,000

Low Cost Scenario:

- no new APC systems
- Chemical fume suppressants will be certified prior to 2021
- Cost: $0

In addition to new APC systems for Tier III Tanks, this analysis also includes cost estimates for APC systems for existing tanks that are currently controlled only by certified chemical fume suppressants. There are a total of 27 facilities with chromium electroplating and/or anodizing tanks that are currently controlled only by certified chemical fume suppressants.

It is assumed that all tanks located at facilities that are complying with the current requirements of Rule 1469 using only fume suppressants will delay any decisions on installing APC systems until after SCAQMD provides notice to facilities in January 2020 regarding the availability of certified chemical fume suppressants. It is further assumed that all facilities will install one APC system for all electroplating/anodizing tanks located at the facility. These assumptions recognize the small size of facilities currently using certified chemical fume suppressants and the likelihood that most of these facilities have a single electroplating or anodizing tank. Therefore, 27 additional APC systems were assumed to be installed to control emissions from electroplating/anodizing operations at these facilities in the event that chemical fume suppressants are not certified by SCAQMD and CARB.

- **Cost of PTEs**

High Cost Scenario:
- 2 PTEs will be triggered
- Ventilation system based on 15 air changes per hour
- Cost: $340,000

Low Cost Scenario:
- 2 PTEs will be triggered
- Ventilation system based on 6 air changes per hour
- Cost: $184,000

The PAR 1469 requirement for a PTE is triggered by one of several proposed provisions. These include:

1. More than one non-passing source test within a consecutive 48-month period; or
2. Two failures to cease operating a tank controlled by air pollution control (APC) system within 48 months for facilities located more than 1,000 feet from a sensitive receptor or a school; or a single failure for facilities located less than 1,000 feet from a sensitive receptor or a school, after a:
   (i) Failed parameter monitoring measurement (i.e. slot velocity or smoke test) of an APC system; or
   (ii) Failed smoke test of an add-on non-ventilated APC device (i.e. tank cover or Merlin Hood).

Within 180 days after PAR 1469 is adopted, enclosure openings for both building enclosures and PTEs are required to be less than 3.5% of the building envelope (i.e. area of walls plus floor and horizontal projection of ceiling on the floor). This requirement would be in effect before any PTE can be triggered. This means all necessary building construction would be done prior to a PTE being required. In addition to meeting the enclosure opening requirement, a PTE will require the installation of a ventilation system designed to meet the face velocity requirements of U.S. EPA Method 204. This is the only construction assumed if a PTE is triggered. Staff believes the likelihood of triggering construction of a PTE under any of the scenarios listed above is very low. To be conservative, an estimate of two PTEs was used.

The ventilation rate assumed for the low cost scenario is based on six air changes per hour (ACH) and based on 15 ACH for the high cost scenario. This equates to 4,000 cfm to 10,000 cfm for an average size building (40,000 cubic feet of volume).

It is assumed that the APC system consists of similar makeup to a dedicated system serving a Tier III Tank; that is, a mist eliminator followed by pre-filter and HEPA filters as final control. As such, the cost of installation of an APC system as described before is $23 per cfm for the 4,000 cfm system, and $17 per cfm for the 10,000 cfm system. It is further assumed that no building construction will be necessary to meet the PTE requirements, since PAR 1469 already requires that openings for a building enclosure do not exceed 3.5% of the building envelope, and all necessary construction has already taken place. The estimated cost of the two PTEs is therefore $184,000 for the low cost scenario, and $340,000 for the high cost scenario. Annual operating costs for the two PTEs are estimated as 18% of the capital cost,[7] plus electricity to operate the ventilation blower. This O&M cost was already also assumed for APC systems serving Tier III Tanks.

- **Initial Source Testing for New APC Systems for existing Tier III Tanks**

High Cost Scenario:

- 103 initial source tests for new APC systems
- One APC system per Tier III Tank
- Cost: $1,937,000*

Low Cost Scenario:

- 64 source tests for new APC systems
- Multiple Tier III tanks per APC system
- Cost: $1,270,000

*Cost is adjusted for removal of stripping tanks within Decorative (small) and Decorative (medium) categories based on low concentrations (less than 1,000 ppm) of hexavalent chromium measured during sampling.

PAR 1469 requires an initial source test for new APC systems to measure emissions and establish system parameters. This requirement will affect 103 Tier III Tanks at 55 facilities. For the high cost scenario, it was assumed that one APC system is necessary for each tank resulting in 103 APC systems. For the low cost scenario, it is assumed that facilities with Tier III Tanks will take advantage of the cost savings of a larger system serving multiple tanks and 64 APC systems would serve 103 Tier III Tanks. Staff received a quote from a source testing contractor that performs the majority of source tests for facilities subject to PAR 1469. The current cost of a conventional source test consisting of three individual collection runs according to a SCAQMD approved protocol is $20,000. The total estimated costs for source tests conducted on APC systems serving 103 Tier III Tanks ranges from $1,270,000 for the low cost scenario to $1,937,000 for the high cost scenario. It is further assumed that initial source tests for new Tier III Tanks start in 2020 and 2021 and that for electrolytic tanks starts in 2022, respectively.

[7] 18% O&M for PTE is based on information provided by industry economist consultant.

- **Initial Source Tests for Existing APCs for Existing Electrolytic Tanks**

High Cost Scenario:

- 25 initial source tests for existing APC systems if most recent source test was conducted before January 2009 at $20,000 each
- 64 emission screening tests for existing APC systems if most recent source test was conducted before January 2009 at $14,000 each
- Cost: $1,396,000

Low Cost Scenario:

- Same as High Cost Scenario
- Cost: $1,396,000

PAR 1469 requires a source test for existing equipment. Some APC systems serving existing electrolytic tanks were tested following the previous amendment to Rule 1469 in 2008. In order to minimize the cost of this requirement to industry, APCs with source tests that were conducted after January 2009 are allowed to conduct an emissions screening test to satisfy the initial source testing requirement. In addition, PAR 1469 allows facilities with a source test conducted after January 2015 to satisfy the requirement for an initial source test. An emissions screening test consists of a single run and is estimated to cost $14,000. It is estimated that it will cost $1,396,000 to source test 89 APC systems serving electrolytic tanks, for both the low cost and high cost scenarios.

- **Initial Source Tests for New APC Systems for Existing Electrolytic Tanks controlled by Chemical Fume Suppressants Only**

High Cost Scenario:

- 27 initial source tests for new APC systems serving tanks formerly controlled by chemical fume suppressants
- Chemical fume suppressants will not be certified prior to 2021
- Cost: $540,000

Low Cost Scenario:

- No initial source tests for tanks controlled by chemical fume suppressants
- Chemical fume suppressants will be certified prior to 2021
- Cost: $0

The high cost scenario assumes that certified chemical fume suppressant would not be certified prior to the July 2021 date in PAR 1469, and would require at facilities that currently use certified chemical fume suppressants would require APC systems to comply with the emission limits. If this occurs, 27 new APC systems would be required at 27 facilities. The estimated cost to source test these APC systems is $540,000. The low cost scenario assumes a chemical fume suppressant will be certified and available by July 2021 and no APC systems are necessary, resulting in no additional cost.

The total initial source test cost are estimated at $2,666,000 to $3,873,000 for low and high cost scenarios, respectively.

- **Permitting Costs for New APC Systems for Existing Tier III Tanks**

High Cost Scenario:

- 103 permit applications for new APC systems
- One APC system per Tier III Tank
- Cost: $420,000

Low Cost Scenario:

- 64 permit applications for new APC systems
- Multiple Tier III tanks per APC system
- Cost: $280,000

A permit application fee is submitted with the permit application for each new APC system required by PAR 1469. The estimated number of Tier III Tanks required to be controlled is 103 Tier III Tanks at 55 facilities, as previously described. The applicable permit fee schedule is Schedule C, which is $4,354 for each permit required. As previously described, the high cost scenario assumes individual APC systems for each tank, resulting in a total one-time cost of $420,000. The low cost scenario assumes 64 APC systems will be necessary to control emissions from 103 Tier III Tanks, resulting in a one-time permitting application fee cost of $280,000.

- **Permitting for New APC Systems Serving Existing Electrolytic Tanks Controlled By Chemical Fume Suppressants Only**

High Cost Scenario:

- 27 permit applications for new APC systems serving tanks formerly controlled by chemical fume suppressants only
- Chemical fume suppressants will not be certified prior to 2021
- Cost: $118,000

Low Cost Scenario:

- No permit applications for tanks controlled by chemical fume suppressants only
- Chemical fume suppressants will be certified prior to 2021
- Cost: $0

If certification of a chemical fume suppressant is not made available for existing electrolytic tanks by July 2021, the installation of new APC systems would be required by PAR 1469. Permitting costs associated with the new APC systems are $118,000. The low cost scenario assumes availability of a certified chemical fume suppressant, and would result in no installation of an APC system and no permitting costs accordingly.

- **Fluid Eductors**

High Cost Scenario:

- 20 passivation and chem film tanks will use fluid eductors rather than controlling tanks with an APC system
- Cost quote obtained by industry consultant
- Cost: $42,000

Low Cost Scenario:

- 20 passivation and chem film tanks will use fluid eductors rather than controlling tanks with an APC system
- Cost quote obtained by SCAQMD staff
- Cost: $30,000

As previously described, it is assumed that facilities would choose to use a lower cost option over installing APC systems where available. For tanks that are currently air sparged, but where chromium concentrations are low enough to be considered Tier I Tanks without air sparging, such as chem-film and passivation tanks, a lower cost option is available in the form of fluid eductors. This analysis assumes these tanks will be retrofitted with fluid eductors, rather than continuing to be air sparged, resulting in much lower overall cost as compared to installing and maintaining an APC system. Since there are no moving parts within fluid eductors, there is no maintenance cost. There are an estimated 20 chem film and passivation tanks that can make use of this option. SCAQMD staff obtained an estimated cost of $1,500 for fluid eductors sized to fit an average tank. This value is used for the low cost scenario. MFASC's industry consultant obtained a similar quote of $2,100 per average tank, and this value is used for the high cost scenario. The capital costs for fluid eductors in PAR 1469 is estimated at $30,000 and $42,000 for low cost scenario and high cost scenario, respectively.

Annual O&M Costs of APC Systems and Other Recurring Costs

Annual cost estimates include annual O&M costs of APC systems, annual costs of electrical power to run new ventilation blowers, parameter monitoring, annual permit renewal fees, and annual costs of periodic (every five to seven years) source tests required under PAR 1469.

- **Screening Source Test (Recurring) Costs for Existing Electrolytic and Tier III Tanks**

High Cost Scenario:

- 219 source tests every 5 to 7 years
- 103 emission screening tests for new APC systems serving Tier III tanks + 89 screening source test for existing APC systems serving electrolytic tanks + 27 screening source tests for new APC systems serving tanks formerly controlled by chemical fume suppressants
- Cost: $5,897,000 total for years 2019 to 2035 (present value), see Table 2 Screening Test (Recurring) categories

Low Cost Scenario:

- 153 source tests every 5 to 7 years
- 64 emission screening tests for new APC systems serving Tier III tanks + 89 emission screening tests for existing APC systems serving electrolytic tanks
- Cost: $4,187,000 total for years 2019 to 2035 (present value), see Table 2 Screening Test (Recurring) categories

PAR 1469 requires source tests to be conducted every five to seven years for new and existing APC systems. The compliance dates for initial source tests are staggered by 180 days, depending on when the APC system is required to be installed. For chromic acid anodizing facilities, the initial source test is required by October 2020 and next subsequent test within five to seven years, by 2025 or 2027. For hard chrome plating facilities the initial test would be due in April 2021 and the subsequent test in 2026 or 2028. For decorative plating facilities, the initial test would be due in October 2021 and the subsequent test in 2026 or 2028.

For the high cost scenario, it is assumed that a total of 219 source tests are required every five to seven years. This would include source tests for 103 APC systems serving 103 Tier III Tanks, 89 APC systems serving electrolytic tanks, and 27 APC systems serving electrolytic tanks currently controlled by certified chemical fume suppressants only. It is assumed that each test will be a screening test only, at a cost of $14,000. For the low cost scenario, it is assumed that a total of 153 source tests are required every five to seven years. This would include source tests for 64 APC systems serving 103 Tier III Tanks and 89 APC systems serving electrolytic tanks. The total annual source test cost for the low and high cost scenarios are estimated at $268,000, and $378,000, respectively.

- **Annual Monitoring Costs**

High Cost Scenario:	• 412 labor hours for smoke tests • 348 labor hours for inlet slot velocity measurements • 103 new APC systems serving Tier III tanks + 89 existing APC systems serving electrolytic tanks + 27 new APC systems serving tanks formerly controlled by chemical fume suppressants • Cost: $265,000 total for years 2019 to 2035 (present value)
Low Cost Scenario:	• 236 labor hours for smoke tests • 306 labor hours for inlet slot velocity measurements • 64 new APC systems serving Tier III tanks + 89 for existing APC systems serving electrolytic tanks • Cost: $180,000 total for years 2019 to 2035 (present value)

PAR 1469 requires parameter monitoring to be conducted every six months. The requirements include conducting a smoke test to determine acceptable capture efficiency of the APC system, and inlet velocity measurements of the APC system to ensure they are operating at or near their design velocity. Smoke tests are an existing requirement and will only affect new APC systems. A conservative estimate of two hours per smoke test is assumed for this analysis. It is also assumed that existing shop personnel will conduct smoke tests. Under PAR 1469, 64 to 103 new APC systems will need to be tested twice per year, for a total of 236 to 412 labor hours. It is further assumed that labor rates for shop personnel are approximately $22 per hour which would result in a total estimated annual cost of $5,192 to $9,064 for shop personnel to conduct smoke tests.

Measurement of APC system inlet velocity is a new requirement that will affect existing as well as new APC systems. There are 89 existing systems, and from 64 to 103 new APC systems will be required under PAR 1469 for the low and high cost scenario, respectively. It is assumed that one hour per inlet velocity measurement will be required for this task. It is also assumed that existing shop personnel will conduct inlet slot velocity measurements. For the low cost scenario, 153 inlet slot velocity measurements (64 new + 89 existing) will be conducted twice per year, for a total of 306 labor hours. Under the high cost scenario 192 inlet slot velocity measurements (103 new + 89 existing) will be conducted twice per year, for a total of 384 labor hours. It is further assumed that labor rates for shop personnel are approximately $22 per hour, which would result in a total annual estimated cost of $6,512 to $8,448 for shop personnel to conduct inlet slot velocity measurements.

For the inlet slot velocity measurements, it is also assumed that one hot-wire anemometer capable of logging data will be purchased for this task. A suitable hot wire anemometer can be purchased for $600, resulting in a total cost of $66,600 for the 111 facilities that conduct hexavalent chromium electroplating or chromic acid anodizing.[8]

- **O&M Costs of APC Systems**

High Cost Scenario:

- 18% of capital cost of new APC systems
- 103 new APC systems serving Tier III tanks + 27 new APC systems serving tanks formerly controlled by chemical fume suppressants
- Cost: $30,680,000 total for years 2019 to 2035 (present value)

Low Cost Scenario:

- 18% of capital cost of new APC systems
- 64 new APC systems serving Tier III tanks
- Cost: $17,655,000 total for years 2019 to 2035 (present value)

O&M costs include replacement filters, disposal of filters, and general maintenance, which includes labor to maintain APC systems. Staff used the methodology in the 2006 CARB Chromium Electroplating ATCM, which is based on a percentage of the total capital plus installation costs for the APC systems. The cost of electrical power usage was included in the CARB ATCM methodology but is adjusted here due to the fact that this analysis includes a separate line item for electrical power consumption. Therefore, a consistent ratio of 18% of the capital and installation costs is assumed for O&M for operating the APC systems.[9] The annual O&M cost of PAR 1469 is estimated at $1,168,000, and $2,010,000 for low cost scenario and high cost scenario, respectively.

Assumptions for APC Systems Serving High Temperature Tier III Tanks

Representatives of the metal finishing industry have reported that controlling emissions from tanks heated above 170 degrees may be problematic with regard to removing moisture from the effluent stream prior to final filtration. PAR 1469 requires an air pollution control system controlling Tier III Tanks to meet an emission limit of 0.0015 mg/amp-hr and it is assumed for this analysis that HEPA filtration (99.97% control efficiency at 0.3 μm) will be necessary to achieve this emission limit. HEPA filters work best in a dry air stream. Moisture in the form of mist, condensing water vapor and aerosols of liquid water is typically removed prior to final filtration using a mist eliminator or scrubbers. However, in a heated effluent stream that may be saturated, it is more difficult to remove moisture. Limited data suggests that it may be necessary to replace HEPA

[8] https://www.grainger.com/category/air-velocity-meters-and-anemometers/air-movement/test-instruments/ecatalog/N-b83?okey=hot+wire+anemometers&mkey=hot+wire+anemometers&refineSearchString=hot+wire+anemometers&NLSCM=14&EndecaKeyword=hot+wire+anemometers&searchRedirect=hot+wire+anemometers&sst=subset&suggestConfigId=

[9] 18% O&M for APC systems are based on information provided by industry economist consultant

filters more often in an APC system venting high temperature tanks than in an ambient-temperature air stream, due to the lower tolerance of HEPA filters in a saturated or near-saturated air stream.

One engineered solution suggested by the metal finishing industry (environmental consultants) is to introduce an additional volume of dry, ambient-temperature air to reduce the relative humidity. They provided an initial estimate of the necessary excess air to be 30%, with the caveat that this volume may need to be refined after installation. There are an estimated 40 tanks that are heated to 170 degrees or higher. These tanks are all located at facilities within the Anodizing (Medium) category. Therefore, the ventilation rate for 40 tanks located within the Anodizing (Medium) category is increased by 30% to account for this additional air. This assumption is made for both the low and high cost scenarios. A HEPA filter cost rated for 2000 cfm air flow at a differential pressure of two inches of water column is estimated at $611.[10]

The estimated average airflow for an APC system serving a Tier III Tank in the Anodizing (Medium) category is 12,810 cfm. Raising this value by 30% results in an estimated 16,653 cfm. It is assumed that nine HEPA filters will be necessary for this size system.

- **Screening Source Test (Recurring) Cost for Tier III Tanks**

All recurring costs are already accounted for under Screening Source Test (Recurring) Cost for Existing Electrolytic and Tier III Tanks.

- **Screening Source Test (Recurring) Cost for New APC Systems for Electrolytic Tanks Controlled by Chemical Fume Suppressants**

All recurring costs are already accounted for under Screening Source Test (Recurring) Cost for Existing Electrolytic and Tier III Tanks.

- **Annual Operating (Electrical) Costs**

High Cost Scenario:

- 2,615,000 kWh/yr
- Additional 30% excess air assumed for high temperature tanks
- Cost: $6,092,000 total for years 2019 to 2035 (present value)

Low Cost Scenario:

- 2,300,000 kWh/yr
- Standard assumptions – no excess air
- Cost: $5,174,000 total for years 2019 to 2035 (present value)

Survey data from existing APC systems was used to estimate power consumption as a function of blower size. From the survey results, it was determined that each horsepower of motor rating was associated with 550 cfm of ventilation air moving through ventilation systems installed in a typical chromium electroplating or chromic acid anodizing facility. The average size of a ventilation

[10] https://www.grainger.com/category/hvac-and-refrigeration-air-filters-hepa-filters/ecatalog/N-qbp/Ntt-hepa+filters?sst=subset&ts_optout=true

system estimated for each category of facilities was then correlated with motor horsepower that is required to move an equivalent volume of ventilation air. Total system motor horsepower was then converted to kilowatt-hours (kWh) of power per year required, assuming an average operating schedule of 12 hours per day and five days per week. Using this approach and a unit cost of $0.14-0.15/kWh results in a cost estimate of $338,000 and $368,000 annually for low and high cost scenario for electrical power to run ventilation blowers for the new APC systems required under PAR 1469.[11]

- **Annual Permit Renewal Costs for Tier III Tanks**

High Cost Scenario:	
	• 130 permit renewals for new APC systems • One APC system per Tier III tank • Cost: $2,496,000 total for years 2019 to 2035 (present value)
Low Cost Scenario:	
	• 64 permit applications for new APC systems • Multiple Tier III tanks per APC system • Cost: $1,904,000 total for years 2019 to 2035 (present value)

An annual permit renewal fee is charged for each new permit required under PAR 1469. This includes APC systems serving 103 Tier III Tanks, as previously discussed. The annual permit renewal fee for Schedule C is $1,409 for calendar year 2018 and thereafter. As previously described, the high cost scenario assumes individual APC systems for each Tier III Tank, resulting in 103 new APC systems and an annual permit renewal cost of $145,000. The low cost scenario assumes 64 APC systems will be necessary to control emissions from 103 Tier III Tanks, resulting in an average annual permit renewal fee of $83,000. It is further assumed that the annual permit renewal cost starts in 2020.

The high cost scenario also includes annual permit renewal fees for new APCs serving existing electrolytic tanks if no chemical fume suppressants are certified after July 2022. The cost of annual permit renewal fees for these 27 APC systems is $38,043. Total annual permit renewal costs are estimated at $183,000 for the high cost scenario and $118,000 for the low cost scenario, respectively.

[11] https://www.electricitylocal.com/states/california/los-angeles/

FACILITY-BASED IMPACT ANALYSIS

The 2014 Abt audit report recommended that the SCAQMD expand its small business impacts analysis in its socioeconomic assessments. Specifically, Abt recommended staff to limit the scope of its small business impact analyses to the direct compliance expenditures of regulated facilities. To provide context for the estimated compliance costs for small business, Abt recommended that SCAQMD compare these costs to the annual revenues and/or profits of small business. For publicly traded companies, they recommended SCAQMD obtain revenue and profit data from existing databases such as Dun & Bradstreet or Hoover's. For private companies, Abt recommended that SCAQMD compare costs to the revenues and/or profits of the average small business in an industry based on industry-specific revenue data from the Economic Census and industry-specific profit margin data from the Risk Management Association's Annual eStatement Studies series.

SCAQMD conducted a facility-based impact analysis in order to provide further information on the potential impacts of PAR 1469 for small businesses.[12] This analysis measures the annual compliance cost a facility may incur under the proposed amendments relative to its annual revenues. While this section provides information about how compliance costs affect an individual facility, it does not describe broader economic impacts, such as the impact on jobs and other socioeconomic effects, which are described in the following section of this report. The compliance cost is categorized by the different facility types as summarized in Table 6, which provides the basis of the cost data for this analysis. There are a few different sources of revenue and sales data that can be utilized for this type of analysis and they are discussed below.

- **Revenue Data**

Staff has examined a number of different data sources to help understand the amount of revenue for affected facilities. The first data source described here, which helps provide a baseline for this analysis, is from the 2012 U.S. Economic Census.[13] The Industry Statistics for Subsectors and Industries by Employment Size includes data by both detailed industry level (six digit NAICS), and by number of employees per establishment. Table 6 describes the data for the electroplating, plating, polishing, anodizing, and coloring industry (NAICS 332813), which comprises the vast majority of affected facilities under PAR 1469. According to these data, the majority of establishments fall within the less than four employee category. The average revenue per establishment ranges from $264,000 for the smallest category of facilities to over $24 million for the largest category of facilities, with an average of $3 million per facility. The revenue per employee tends to increase with the size of the establishment, with an average of $137,200 per

[12] Based on methodological recommendations from Industrial Economics (2017): http://www.aqmd.gov/docs/default-source/clean-air-plans/socioeconomic-analysis/iec_smallscalebizrpt.pdf .

[13] U.S. Census Bureau. Manufacturing Summary Series: General Summary: Industry Statistics for Subsectors and Industries by Employment Size: 2012. https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_31SG2&prodType=table

employee for all establishments in the United States. The revenue per employee across all establishments in this industry in the four-county SCAQMD region is $107,000.[14]

Table 6:
2012 Establishment Annual Revenue by Employment Size for the Electroplating, Plating, Polishing, Anodizing, and Coloring Industry (NAICS 332813)[15]

Size of establishment	Revenue* per establishment	Revenue* per employee
0 to 4 employees	$264,071	$83,235 to $208,088
5 to 9 employees	$835,424	$123,098
10 to 19 employees	$1,558,802	$110,395
20 to 49 employees	$3,946,687	$125,509
50 to 99 employees	$10,179,833	$144,977
100 to 249 employees	$24,141,949	$173,178
250 to 499 employees**	n/a	n/a
500 to 999 employees**	n/a	n/a
All establishments	$2,977,510	$137,242

*Total value of shipments and receipts for services (2012 dollars)
** There were no facilities within NAICS 332813 found in the category of 250 to 499, 500 to 999 employees

Another data source considered for this analysis was the Dun & Bradstreet Enterprise Database. This database is used by staff to help classify potential affected facilities as small businesses as described in the previous section and it includes data on facilities' annual revenues and number of employees. Data on employment and revenue are available for 104 of the 115 affected facilities. Based on the available information, these data are considered to have a high level of confidence because it tracks with facility data, but nonetheless there is still some level of uncertainty associated with these estimates. In the following tables, the data are summarized according to size of establishment and the facility classification types used in development of PAR 1469. The data are first summarized by facility employment size in Table 7. Based on these data, the total annual revenue for affected facilities for which data are available is nearly $1 billion dollars and the total number of employees directly employed by affected facilities is about 5,300. The average annual revenue for the affected facilities is approximately $9.2 million and increases with facility size. The revenue per employee is approximately $182,000 and is proportional to facility size. The revenue per employee from the Dun & Bradstreet 2017 database are comparable to that from the Economic Census when adjusted to 2017 dollars, adding to staff's confidence in the validity of the U.S. Economic Census data.[16]

[14] U.S. Census Bureau. Manufacturing Summary Series: General Summary: Industry Statistics for Subsectors and Industries by Employment Size: 2012.
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_31A1&prodType=table
[15] U.S. Census Bureau. Manufacturing Summary Series: General Summary: Industry Statistics for Subsectors and Industries by Employment Size: 2012.
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_31SG2&prodType=table
[16] The $137,200 from Table 6 is approximately $151,000 in 2017 dollars when adjusted for California CPI.

Table 7:
Summary of Dun & Bradstreet Revenue and Employment Data (2017) by Facility Size

Employees	Number of facilities	Total Revenue (Millions)	Total Employees	Average Revenue (Millions)	Revenue per Employee
1 to 4	11	$1.90	25	$0.17	$76,000
5 to 9	14	$7.59	85	$0.54	$89,000
10 to 19	19	$24.18	246	$1.27	$98,000
20 to 49	24	$97.98	792	$4.08	$124,000
50 to 99	20	$233.52	1318	$11.68	$177,000
100 to 249	14	$498.97	2080	$35.64	$240,000
250 to 499	2	$97.32	743	$48.66	$131,000
Overall	**104**	**$961.46**	**5289**	**$9.24**	**$182,000**

The Dun & Bradstreet data are also summarized by facility classification in Table 8. These classifications correspond with those presented in the cost analysis section (Table 3). The Anodizing (Medium) facilities tend to have higher revenues than corresponding decorative and hard plating shops on average. There is a large range in revenue and number of employees within the facility categories.

Table 8:
Summary of Dun & Bradstreet Revenue and Employment Data (2017) by Facility Category

Category*	Number of Facilities	Average Annual Revenue (Millions)	Range of Annual Revenue (Millions)	Average Number of Employees per facility	Range of Employees per facility	Average Revenue per employee
Anodizing (Small)	13	$13.44	$0.35 - $56.22	61	7 - 154	$220,000
Anodizing (Medium)	14	$25.71	$1.1 - $167.92	109	40 - 388	$240,000
Decorative (Small)	27	$1.67	$0.08 - $5.8	18	1 - 70	$90,000
Decorative (Medium)	11	$10.19	$0.04 - $58.81	62	1 - 225	$160,000
Decorative (Large)	5	$10.76	$0.16 - $24.04	77	2 - 150	$140,000
Decorative (Other)	2	$1.56	$0.05 - $3.06	8	1 - 14	$210,000
Hard (Small)	6	$8.20	$0.86 - $42.49	42	7 - 175	$200,000
Hard (Medium)	4	$10.09	$0.59 - $19.93	54	5 - 130	$190,000
Hard (Large)	18	$5.10	$0.22 - $45.85	40	3 - 355	$130,000
Trivalent (Other)	4	$7.85	$0.72 - $20.35	53	7 - 140	$150,000
Total	**104**	**$9.24**	**$0.04 - $167.92**	**51**	**1 - 388**	**$180,000**

*Anodizing (Other) and multiple (Large) are excluded from the table due to lack of revenue data. Hard (Other) was combined with Hard (Large) category because Hard (Other) consists of one facility.

During the development of PAR 1469, facilities were sent a survey with questions on many aspects of their operations. Included were questions on the number of workers employed by facility and the average annual revenues. The response rate to the questions on number of employees was about 45% and the response rate to the questions on revenue was about 36%. Staff's analysis of this survey data resulted in an average revenue per employee of about $69,000. Upon statistical evaluation it was found that these data differ significantly from the baseline data from the U.S. Economic Census and facility specific data provided by the Dun & Bradstreet database.[17] Due to this large difference, the survey data was not utilized here for the assessment of facility-based impacts.

- **Analysis**

Table 9 summarizes the results of the analysis using the Dun & Bradstreet sales data. The second column shows the average annual facility cost for facilities in each category for the both the high and low cost scenarios. The Anodizing (Medium facility) category has the highest average cost for both the high and low cost scenario, with a range of $55,000 to $90,000. The facility average cost for the Decorative (Small) category, which has the greatest number of affected facilities, ranges from $12,000 to $26,000. The next column shows the range of facility costs in each category. Facility costs are estimated to range from $0 to $97,000 depending on facility category and low or high cost scenarios. The Anodizing (Medium) category has costs that range from $5,000 to $97,000, while the Decorative (Small) category has costs that range from $12,000 to $26,000.

Table 9
Facility-specific Annual Cost and Cost Impacts

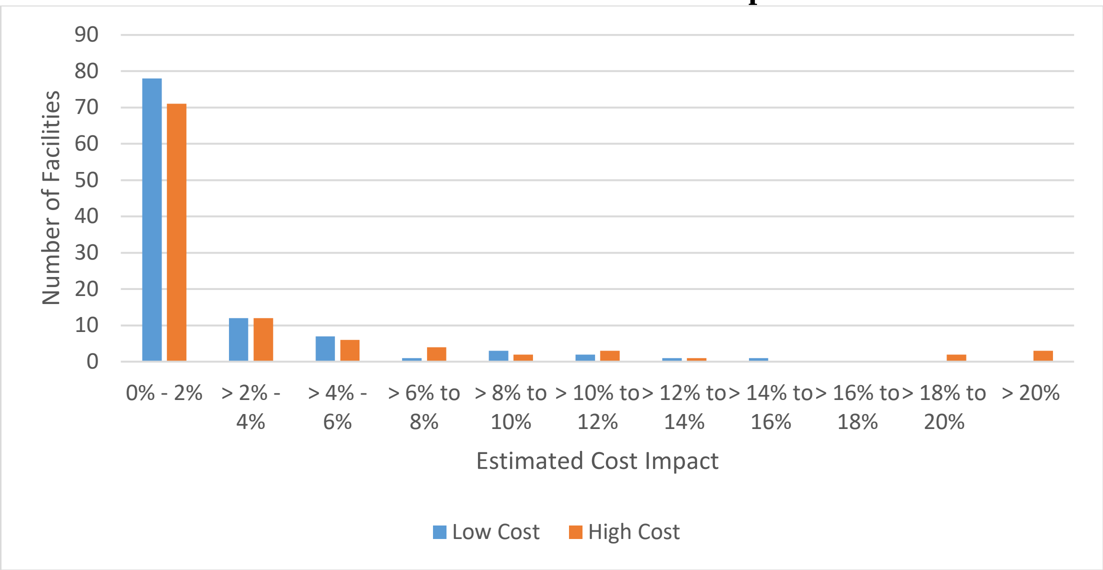
Category	Average Facility Annual Cost (Low Cost Scenario - High Cost scenario)	Range of Facility Annual Cost (Min - Max)	Average Cost Impacts (Low Cost scenario - High Cost Scenario)
Anodizing (Small)	$44,000 - $65,000	$43,000 - $66,000	1.6% - 2.5%
Anodizing (Medium)	$55,000 - $90,000	$5,000 - $97,000	0.8% - 1.4%
Decorative (Small)	$12,000 - $26,000	$12,000 - $26,000	3.4% - 7.4%
Decorative (Medium)	$16,000 - $24,000	$16,000 - $24,000	1.6% - 2.4%
Decorative (Large)	$3,000 - $3,000	$3,000 - $3,000	0.4% - 0.4%
Decorative (Other)	$3,000 - $3,000	$3,000 - $3,000	3% - 3.1%
Hard (Small)	$2,000 - $4,000	$1,000 - $4,000	0.1% - 0.3%
Hard (Medium)	$7,000 - $7,000	$6,000 - $9,000	0.4% - 0.4%
Hard (Large)	$22,000 - $30,000	$22,000 - $30,000	1.9% - 2.7%
Trivalent (Other)	$0 - $0	$0 - $0	0% - 0%
Total	**$22,000 - $36,000**	**$0 - $97,000**	**1.8% - 3.3%**

[17] A student's t-test was used to test the hypothesis that the sample average revenue per employee was different from that of the Economic Census. The result of the test was to reject the null hypothesis that the two averages were equal with $\alpha < 0.01$.

Combining these cost data with the revenue data from Table 7, the facility based cost impacts are estimated. The cost impacts for affected facilities are on average 1.8% for the low cost scenario and 3.3% for the high cost scenario. The Anodizing (Medium) category has average cost impacts that range from 0.8% to 1.4%, while the Decorative (Small) category has average cost impacts that range from 3.4% to 7.4%.

These facility-specific cost impacts are provided here for additional information, as requested by stakeholders, as SCAQMD does not have any threshold above which cost impacts are considered significant. Figure 2 illustrates the distribution of cost impacts for affected facilities. It is important to note that there greater amount of uncertainty associated with the estimate for any individual facility than there is for the average impact shown in Table 9. Figure 2 below illustrates the majority of facilities in both scenarios are estimated to have cost impacts of 0% to 2%.

Figure 2:
Distribution of Cost Impacts



While the facility-based analysis provides further information about the cost impacts to individual facilities, it cannot provide information about how these costs may be passed through to downstream industries and other end-users. It is likely that if a large portion of facilities in this industry are incurring compliance costs, it will have an effect on prices throughout the supply-chain. The extent to which these costs are passed through and have impacts on the regional economy is discussed in the next section of this report.

Staff has added a provision that the Executive Officer, in consultation with CARB, may approve an alternative to a wetting agent chemical fume suppressant that is as equally effective as a certified chemical fume suppressant pursuant to paragraph (l)(2) of PAR 1469. This approach will allow facilities to use an alternative to a wetting agent chemical fume suppressant if emissions testing conducted by SCAQMD demonstrates that the alternative is as equally effective as a certified wetting agent chemical fume suppressant. Additionally, the owner or operator of a facility that opts to use an alternative to a wetting agent chemical fume suppressant will be required to comply with conditions that are specified during the certification process.

The alternative to a wetting agent chemical fume suppressant would be available to only the smallest plating facilities that are currently allowed to use chemical fume suppressants. This approach will provide a cost savings given that SCAQMD staff will conduct the necessary emissions testing. Similar to the use of certified chemical fume suppressants, no further emissions testing would be required if the operator complies with the conditions of the approval for the alternative.

The socioeconomic impact analysis conservatively assumes that if chemical fume suppressants are not certified, the owner or operators of facilities subject to PAR 1469 will install an add-on pollution control technology such as HEPA filtration. Recognizing the potential financial impact to smaller facilities, the adoption resolution for PAR 1469 will include a commitment that staff will seek funding to help offset the cost of add-on pollution controls if non-PFOS chemical fume suppressants cannot be certified. If an alternative to a wetting agent chemical fume suppressant can be used for these smaller plating facilities, this would eliminate source testing costs and possibly allow use of another air pollution control technology that has lower capital and operating costs.

- **Conservative Nature of Cost Assumptions**

The cost assumptions used in this analysis are conservative and may have overestimated the actual costs of compliance with PAR 1469, particularly for the high cost scenario. Approximately 75% of the total cost associated with PAR 1469 is associated with the number of new APC systems assumed to be required for Tier III Tanks. Capital costs and O&M costs include electricity, and permitting and source testing costs. However, the actual costs associated with PAR 1469 compliance may be less than assumed for the following reasons:

1. The number of Tier III tanks is fewer than estimated.
    a. Some Tier III Tanks could be classified as Tier II Tanks if they are operated within the temperature and tank bath concentrations defined in PAR 1469 Appendix 10. Controls for Tier II Tanks are less expensive than for Tier III Tanks, for example, the use of a tank cover for a Tier II Tank is far less expensive than the installation, operation, permitting, and source test associated with a Tier III Tank requiring an APC system.
    b. Many of the stripping and electro-polishing tanks that are currently assumed to be Tier III Tanks would be regulated as a Tier I or Tier II Tank under PAR 1469 if the tank bath is operated at a hexavalent chromium concentration below 1,000 ppm (Tier I Tank) or below the temperature and concentration (Tier II Tank). SCAQMD staff has tested stripping and electro-polishing tanks and found that they can operate below the requirements of a Tier III tank. An owner or operator may, for example, convert to a chemical stripping process or change the tank bath frequently enough to ensure the concentration stays below 1,000 ppm.
2. Under the high-cost scenario, it is assumed that most tanks will require an APC system sized to control emissions from that individual tank. This is a conservative assumption as staff believes there are many opportunities for a plating or anodizing facility to realize savings by venting multiple tanks to a common APC system, moving tanks that are not currently located

in proximity to each other and venting to a common APC system or venting an existing tank into an existing APC system, where capacity of that system allows.

JOBS AND OTHER SOCIOECONOMIC IMPACTS

The REMI model (PI+ v2.1) was used to assess the total socioeconomic impacts of a policy change (i.e., the proposed amended rule). The model links the economic activities in the counties of Los Angeles, Orange, Riverside, and San Bernardino, and for each county, it is comprised of five interrelated blocks: (1) output and demand, (2) labor and capital, (3) population and labor force, (4) wages, prices and costs, and (5) market shares.[18]

The analysis is performed relative to a baseline ("business as usual") where PAR 1469 would not be implemented. PAR 1469 would create a policy scenario under which the affected facilities would incur an average annual compliance cost totaling \$2.64 to \$4.30 million to comply with proposed requirements. Direct effects of PAR 1469 have to be estimated and used as inputs to the REMI model in order for the model to assess secondary and induced impacts for all the actors in the four-county economy on an annual basis and across a user-defined horizon (2019 to 2035). Direct effects of PAR 1469 include additional costs to the affected entities and additional sales by local vendors of equipment, devices, or services that would meet the proposed requirements. While compliance expenditures may increase the cost of doing business for affected facilities, the purchase of additional APCs and HEPA filters combined with spending on operating and maintenance, and source tests, may increase sales in other sectors. Table 10 lists the industry sectors modeled in REMI that would either incur costs or benefits from the compliance expenditures.[19]

[18] Within each county, producers are made up of 66 private non-farm industries, three government sectors, and a farm sector. Trade flows are captured between sectors as well as across the four counties and the rest of U.S. Market shares of industries are dependent upon their product prices, access to production inputs, and local infrastructure. The demographic/migration component has 160 ages/gender/race/ethnicity cohorts and captures population changes in births, deaths, and migration. (For details, please refer to REMI online documentation at http://www.remi.com/products/pi.)

[19] Improved public health due to reduced air pollution emissions may also result in a positive effect on worker productivity and other economic factors; however, public health benefit assessment requires the modeling of air quality improvements. Therefore, it is conducted for Air Quality Management Plans and not for individual rules or rule amendments.

Table 10:
Industries Incurring vs. Benefitting from Compliance Costs/Spending

Source of Compliance Costs	REMI Industries Incurring Compliance Costs (3-digit NAICS)	REMI Industries Benefitting from Compliance Spending (NAICS)
APCs (HEPA Filters)	Fabricated Metal Manufacturing (332) Other Manufacturing (333-337) Wholesale and Retail Trade (423, 444) Professional, Scientific, and other Technical Services (541, 651) Repair and Maintenance (811)	*One-time-Capital:* Machinery Manufacturing (333)
APCs (HEPA) Maintenance		*Recurring Cost:* Professional, Scientific, and Technical Services (541)
Initial Source Tests		*One-time Cost* Professional, Scientific, and Technical Services (541)
Recurring Screening Tests		*Recurring Cost* Professional, Scientific, and Technical Services (541)
Permanent Total Enclosures		
Building Enclosure Modifications		*One-time-Capital:* Construction (236)
BMPs (Splash Guards, Barrier, Pressure Gauge, Magnetic Control Device)		*One-time-Capital:* Machinery Manufacturing (333)
Utilities (Electricity)		*Recurring Cost:* Utilities (221)
Permits for New APCs		*One-time-Capital:* Government (92)
Annual Permit Renewal Fee Permits		*Recurring Cost:* Public Administration (92)[20]
Fluid Eductors		*One-time-Capital:* Machinery Manufacturing (333)

As discussed earlier, the total average (2019 to 2035) annual compliance costs for affected facilities from PAR 1469 was estimated to range from \$2.64 million (low cost scenario) to \$4.3 million (high cost scenario) per year.

[20] Instead of using the default "local government spending" policy variable in REMI, staff elected to use a "custom local government spending" policy variable that it considers to more accurately reflect the SCAQMD spending portfolio. This custom policy variable has a lower proportion of local government spending going into the construction industry and proportionately allocates the difference to local government and professional services sectors. The simulation using this custom policy variable results in a prediction of a lower net job gain than would have been found with the default policy variable. This follows the approach taken in the Socioeconomic Assessment of the Proposed Amended Regulation III Fees from June 2017.

As presented in Tables 11 and 12, PAR 1469 is expected to result in approximately 37 to 63 to jobs forgone annually, on average between 2019 and 2035, when a low cost scenario and high cost scenario are assumed. The projected jobs loss impacts represent about 0.001 % of the total employment in the four-county region. In 2019, under both scenarios, a few additional jobs could be created in the overall economy. Job gains in the sector of manufacturing (NAICS 31-33) are due to purchase of various types of control equipment by the affected facilities (as presented in Tables 11 and 12).

The manufacturing sector (NAICS 31-33), which is projected to bear most of the estimated total compliance costs would have about 2 to 12 jobs forgone on average annually. The remainder of the projected reduction in employment would be across all major sectors of the economy from secondary and induced impacts of PAR 1469, such as the additional costs of doing business by the affected supply-chain businesses.

Although the manufacturing sector would bear the majority of the estimated total compliance costs of PAR 1469, the industry job impact is projected to be relatively small (annual average of 2 to 12 jobs foregone between 2019 and 2035). This is because other businesses in the manufacturing sector, specifically in the machinery manufacturing industry, are expected to benefit from the increased sale of various types of control equipment, thus offsetting the direct effect of compliance costs incurred by other manufacturing facilities. In earlier years, job gains from the expenditures made by the affected facilities would more than offset the jobs forgone from the additional cost of doing business. Jobs foregone in the later years are due to the additional cost of doing business by affected facilities.

Table 11:
Job Impacts of PAR 1469 (High Cost Scenario)

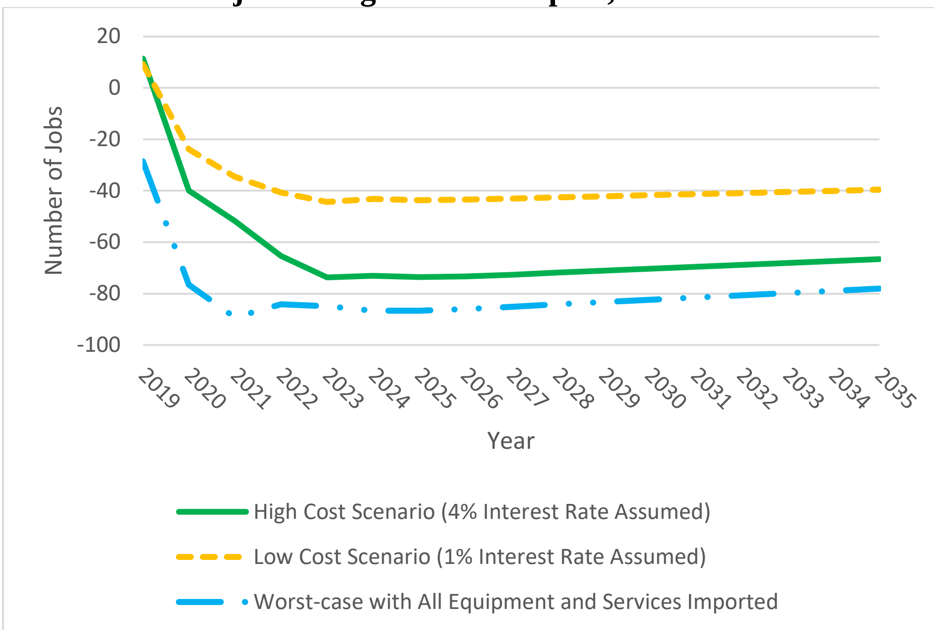
Industries (NAICS)	2019	2025	2035	Average Annual Jobs (2019-2035)	Average Annual Baseline Jobs (2019-2035)	% Change from Baseline Jobs
Construction (23)	-1	-10	-4	-7	535,349	-0.001%
Fabricated Metal (332)	0	-7	-8	-7	91,762	-0.007%
Machinery (333)	8	1	0	1	25,554	0.005%
Computer and Electronic Products (334)	0	-2	-2	-2	101,425	-0.002%
Rest of Manufacturing (31-33)	1	5	0	3	384,406	0.001%
Total Manufacturing (31-33)	8	-13	-14	-12	603,147	-0.002%
Wholesale trade (42)	1	-3	-3	-3	539,304	-0.001%
Retail trade (44-45)	-2	-9	-8	-8	1,039,963	-0.001%
Professional and Technical Services (54)	1	-2	-2	-1	923,211	0.000%
Food services and drinking places (722)	0	-4	-4	-4	708,842	-0.001%
Repair and Maintenance (811)	0	-1	-1	-1	129,259	-0.001%
Government (92)	3	-4	-5	-3	943,724	-0.001%
Other Industries	1	-27	-25	-24	5,759,046	-0.001%
Total	**11**	**-74**	**-67**	**-63**	**11,181,845**	**-0.001%**

Table 12:
Job Impacts of PAR 1469 (Low Cost Scenario)

Industries (NAICS)	2019	2025	2035	Average Annual Jobs (2019-2035)	Average Annual Baseline Jobs (2019-2035)	% Change from Baseline Jobs
Construction (23)	0	-6	-2	-4	535,349	-0.001%
Fabricated Metal (332)	0	-4	-5	0	91,762	0.000%
Machinery (333)	6	0	0	0	25,554	0.000%
Computer and Electronic Products (334)	0	-1	-1	0	101,425	0.000%
Rest of Manufacturing (31-33)	1	-3	-2	-2	384,406	-0.001%
Total Manufacturing (31-33)	6	-8	-9	-2	603,147	-0.001%
Wholesale trade (42)	0	-2	-2	-2	539,304	-0.001%
Retail trade (44-45)	-1	-5	-5	-5	1,039,963	-0.001%
Professional and Technical Services (54)	1	-1	-1	0	923,211	0.000%
Food services and drinking places (722)	0	-3	-3	-2	708,842	-0.001%
Repair and Maintenance (811)	0	-1	-1	-1	129,259	-0.001%
Government (92)	2	-2	-3	-2	943,724	-0.001%
Other Industries	1	-12	-10	-19	5,759,046	-0.001%
Total	**9**	**-44**	**-40**	**-37**	**11,181,845**	**0.000%**

Figure 3 presents a trend of job gain and losses over the 2019 to 2035 time frame. In addition, staff has analyzed an alternative scenario (worst case) where the affected facilities would not purchase any control or service from providers within SCAQMD's jurisdiction. This scenario would result in an average of 80 jobs forgone annually.

Figure 3:
Projected Regional Job Impact, 2019-2035



Competitiveness

PAR 1469 would increase the cost of services rendered by the affected industries in the region. The magnitude of the impact depends on the size and diversification of, and infrastructure in a local economy as well as interactions among industries. A large, diversified, and resourceful economy would absorb the impact described above with relative ease.

Changes in production/service costs would affect prices of goods produced locally. The relative delivered price of a good is based on its production cost and the transportation cost of delivering the good to where it is consumed or used. The average price of a good at the place of use reflects prices of the good produced locally and imported elsewhere.

It is projected that the manufacturing sector, where most of the affected facilities belong, would experience a rise in its relative cost of services by 0.0013% and 0.0022% and a rise in its delivered price by 0.0008% and 0.0012% in 2025 for the low and high cost scenarios, respectively.

While these changes are relatively small, it should be noted that the delivered price change is a change in the index of all prices in the manufacturing sector. Delivered prices that a facility may charge for specific goods or services may increase at a greater rate than this, allowing incurred costs to be passed through to downstream industries and end-users.

ATTACHMENT I

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Revised Final Environmental Assessment for Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

October 2018

SCAQMD No. 02072018SW
State Clearinghouse No: 2018021048

Executive Officer
Wayne Nastri

Deputy Executive Officer
Planning, Rule Development and Area Sources
Philip Fine, Ph.D.

Assistant Deputy Executive Officer
Planning, Rule Development and Area Sources
Susan Nakamura

Assistant Deputy Executive Officer
Planning, Rule Development and Area Sources
Sarah Rees

Authors:	Sam Wang	Air Quality Specialist
	Darren Ha	Air Quality Specialist
Technical Assistance:	Neil Fujiwara	Air Quality Specialist
	Robert Gottschalk	Air Quality Specialist
	Yunnie Chan	Air Quality Specialist
Reviewed By:	Barbara Radlein	Program Supervisor, CEQA
	Michael Krause	Planning and Rules Manager, CEQA
	Jillian Wong, Ph.D.	Planning and Rules Manager
	Eugene Kang	Program Supervisor
	Daphne Hsu	Senior Deputy District Counsel

PREFACE

This document constitutes the Revised Final Environmental Assessment (EA) for Proposed Amended Rule (PAR) 1469 - Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations. A Draft EA was released for a 32-day public review and comment period from February 16, 2018 to March 20, 2018. Analysis of PAR 1469 in the Draft EA did not result in the identification of any environmental topic areas that would be significantly adversely affected. Two comment letters were received during the public comment period on the analysis presented in the Draft EA and responses to individual comments were included in Appendix E of the Final EA (dated August 2018) which was released as part of the Governing Board package for the September 7, 2018 public hearing which can be accessed on SCAQMD's website here: http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2018/2018-sep7-031.pdf. At the public hearing, the Governing Board directed staff to return to Stationary Source Committee before returning to the Governing Board in December. Staff recommended that PAR 1469 be heard by the Governing Board in November 2018 and the Stationary Source Committee concurred.

Subsequent to release of the Draft EA for public review and comment, modifications were made to PAR 1469 and some of the revisions were made in response to verbal and written comments received during the rule development process. To facilitate identification, modifications reflected in the Final EA are included as single underlined text and text removed from the document is indicated by ~~single strikethrough~~. Further, subsequent to the release of the Final EA, some modifications were made to PAR 1469 in response to comments received. To facilitate identification of these additional changes, modifications made in the Revised Final EA (dated October 2018) are included as double underlined text and text removed from the document is indicated by ~~double strikethrough~~. To avoid confusion, minor formatting changes are not shown in underline or strikethrough.

Staff has reviewed all of the modifications to PAR 1469 and concluded that none of the revisions constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or 3) provide new information of substantial importance relative to the draft document. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the document pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. Therefore, this document now constitutes the Revised Final EA for PAR 1469.

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CHAPTER 1

PROJECT DESCRIPTION

INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (SCAQMD or District) in 1977[1] as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin (Basin) and portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). By statute, SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance with all federal and state ambient air quality standards for the District[2]. Furthermore, SCAQMD must adopt rules and regulations that carry out the AQMP[3]. The AQMP is a regional blueprint for how SCAQMD will achieve air quality standards and healthful air and the 2016 AQMP[4] contains multiple goals promoting reductions of criteria air pollutants, greenhouse gases, and toxics. In particular, the 2016 AQMP includes control measure TXM-02: Control of Toxic Metal Particulate Emissions from Plating and Anodizing Operations, which identifies Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid and Anodizing Operations.

Prior to the adoption of Rule 1469, chromium electroplating (hard and decorative) and chromic acid anodizing processes were regulated by Rule 1169 – Hexavalent Chromium – Chrome Plating and Chromic Acid Anodizing which was adopted on June, 3, 1988. However, on October 9, 1998, Rule 1169 was repealed and the provisions were adopted ~~instead~~ in Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations, which is part of Regulation XIV – Toxics and Other Non-Criteria Pollutants.

Ambient monitoring was conducted near several Rule 1469 facilities, and this data, combined with sampling data and emissions testing indicated that the application of heat and/or air sparging[5] can cause hexavalent chromium emissions from ~~the~~ tanks depending on the concentration of hexavalent chromium in the ~~a~~ tank. Since these activities were not previously known to be sources of hexavalent chromium emissions, PAR 1469 now addresses these tanks and includes requirements to help minimize the release of fugitive emissions from these operations. These requirements include ~~such as~~ building enclosures, best management practices, and housekeeping provisions. PAR 1469 also has additional provisions to ensure continuous proper operation of point source air pollution control equipment and contingency provisions to add air pollution control equipment for a building enclosure for any facility that has repeated non-compliance with the point source emission requirements.

1 The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., ch. 324 (codified at Health and Safety Code Section 40400-40540).
2 Health and Safety Code Section 40460(a).
3 Health and Safety Code Section 40440(a).
4 SCAQMD, 2016 Air Quality Management Plan. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf
5 Air sparging is solution mixing by dispersing air into the tank solution to create a homogeneous solution.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA), California Public Resources Code Section 21000 *et seq.*, requires environmental impacts of proposed projects to be evaluated and feasible methods to reduce, avoid or eliminate significant adverse impacts of these projects to be identified and implemented. The lead agency is the "public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect upon the environment" (Public Resources Code Section 21067). Since PAR 1469 is a SCAQMD-proposed amended rule, SCAQMD has the primary responsibility for supervising or approving the entire project as a whole and is the most appropriate public agency to act as lead agency (CEQA Guidelines[6] Section 15051(b)).

CEQA requires that all potential adverse environmental impacts of proposed projects be evaluated and that methods to reduce or avoid identified significant adverse environmental impacts of these projects be implemented if feasible. The purpose of the CEQA process is to inform the lead agency, responsible agencies, decision makers, and the general public of potential adverse environmental impacts that could result from implementing PAR 1469 and to identify feasible mitigation measures or alternatives, when an impact is significant.

Public Resources Code Section 21080.5 allows public agencies with regulatory programs to prepare a plan or other written documents in lieu of an environmental impact report once the Secretary of the Resources Agency has certified the regulatory program. SCAQMD's regulatory program was certified by the Secretary of Resources Agency on March 1, 1989, and has been adopted as SCAQMD Rule 110 – Rule Adoption Procedures to Assure Protection and Enhancement of the Environment.

PAR 1469 has been crafted to further reduce emissions of hexavalent chromium from the facilities and tanks that were not previously known to be sources of hexavalent chromium emissions. PAR 1469 ~~and~~ has requirements to help minimize the release of fugitive emissions from these operations such as building enclosures, best management practices, and housekeeping provisions. Because PAR 1469 requires discretionary approval by a public agency, it is a "project" as defined by CEQA[7]. PAR 1469 (the proposed project) will reduce emissions of hexavalent chromium and will provide an overall environmental benefit to air quality. However, SCAQMD's review of the proposed project also shows that implementation of PAR 1469 may create secondary adverse effects on the environment either directly or indirectly. SCAQMD's review of these secondary adverse effects shows that PAR 1469 would not have any significant adverse effects on the environment. Thus, the type of CEQA document appropriate for the proposed project is an Environmental Assessment (EA). The EA is a substitute CEQA document, prepared in lieu of a Negative Declaration (CEQA Guidelines Section 15252), pursuant to SCAQMD's Certified Regulatory Program (CEQA Guidelines Section 15251(l) and SCAQMD Rule 110). The EA is also a public disclosure document intended to: 1) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental impacts of the proposed project; and, 2) be used as a tool by decision makers to facilitate decision making on the proposed project.

[6] The CEQA Guidelines are codified at Title 14 California Code of Regulations Section 15000 *et seq.*

[7] CEQA Guidelines Section 15378

Thus, SCAQMD, as lead agency for the proposed project, prepared a Draft EA pursuant to its Certified Regulatory Program. The Draft EA includes a project description in Chapter 1 and an Environmental Checklist in Chapter 2. The Environmental Checklist provides a standard tool to identify and evaluate a project's adverse environmental impacts and the analysis concluded that no significant adverse impacts would be expected to occur if PAR 1469 is implemented. Because PAR 1469 will have no statewide, regional or areawide significance, no CEQA scoping meeting is required to be held pursuant to Public Resources Code Section 21083.9(a)(2). Further, pursuant to CEQA Guidelines Section 15252, since no significant adverse impacts were identified, no alternatives or mitigation measures are required.

The Draft EA was ~~is being~~ released for a 32-day public review and comment period from February 16, 2018 to March 20, 2018 and two comment letters were received from the public regarding the analysis in the Draft EA. The~~AllAny~~ comment~~s~~ letters received during the public comment period on the analysis presented in th~~is~~e Draft EA and responses to individual comments were included in Appendix E of the Final EA (dated August 2018) ~~have will been responded to and are included in Appendix E to thise Final EA~~ which was released as part of the Governing Board package for the September 7, 2018 public hearing. The August 2018 Final EA can be accessed from SCAQMD's website here: http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2018/2018-sep7-031.pdf. At the public hearing, the Governing Board directed staff to return to Stationary Source Committee before returning to the Governing Board in December. At the Stationary Source Committee meeting, staff recommended that PAR 1469 be heard by the Governing Board in November 2018.

Subsequent to the release of the Draft EA for public review and comment, modifications were made to PAR 1469, some of which were made in response to verbal and written comments received during the rule development process. The following modifications were included in the Final EA: minor changes for rule clarification, including additions of and revisions to definitions and the reorganization of various components throughout the rule. To facilitate identification, additions to the Final EA were included as single underlined text and deletions were indicated by ~~single strikethrough~~. To avoid confusion, minor formatting changes were not shown in underline or strikethrough.

Further, subsequent to the release of the Final EA, two modifications were made to PAR 1469 in response to comments received. Paragraph (e)(3) was modified to increase the the distance of a sensitive receptor relative to the building enclosure openings facing the sensitive receptor from 100 feet to 1,000 feet and a provision was added to Appendix 10 that does not require add-on pollution control devices for small, low-use tanks that meet specific conditions to ensure these tanks will meet the same maximum potential emission limits as Tier III tanks with add-on pollution control devices. To facilitate the identification of this additional change, additions in the Revised Final EA are included as double underlined text and deletions are indicated by ~~double strikethrough~~.

SCAQMD staff reviewed all of the modifications to PAR 1469 and concluded that none of the modifications constitute: 1) significant new information; or 2) a substantial increase in the severity of an environmental impact; 3) or provide new information of substantial importance relative to the draft document. In addition, the Draft EA, the Final EA, and this Revised Final EA, all concluded no significant adverse environmental impacts and the revisions to PAR 1469 in response to verbal or written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Draft EA pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. Thus, the ~~Draft~~Final EA has been revised to reflect the aforementioned modifications such that it is now the Revised Final EA.

Prior to making a decision on the adoption of PAR 1469, the SCAQMD Governing Board must review and certify the Revised Final EA, including responses to comments, as providing adequate information on the potential adverse environmental impacts that may occur as a result of adopting PAR 1469.

PROJECT LOCATION

Rule 1469 currently applies to all chromium electroplating and chromic acid anodizing facilities located throughout SCAQMD's jurisdiction. SCAQMD staff has identified 115 facilities that conduct decorative or hard chromium electroplating or chromic acid anodizing operations that would be subject to PAR 1469. Of the 115 affected facilities, 47 facilities conduct decorative hexavalent chromium plating, 31 facilities conduct hard hexavalent chromium plating, 31 facilities conduct chromic acid anodizing, only 4 facilities conduct trivalent chromium plating, and 2 facilities conduct both chromic acid anodizing and hard hexavalent chromium plating. The majority of the plating and anodizing facilities subject to PAR 1469 conduct hexavalent chromium plating or chromic acid anodizing. All 115 facilities are categorized using North American Industry Classification System (NAICS) code and summarizes in Appendix D of this Revised Final~~Draft~~ EA. Appendix D also contains the list of affected facilities and their locations within SCAQMD's jurisdiction.

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county Basin (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of SSAB and MDAB. The Basin, which is a subarea of SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. A federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of Riverside County and the SSAB that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (see Figure 1-1).

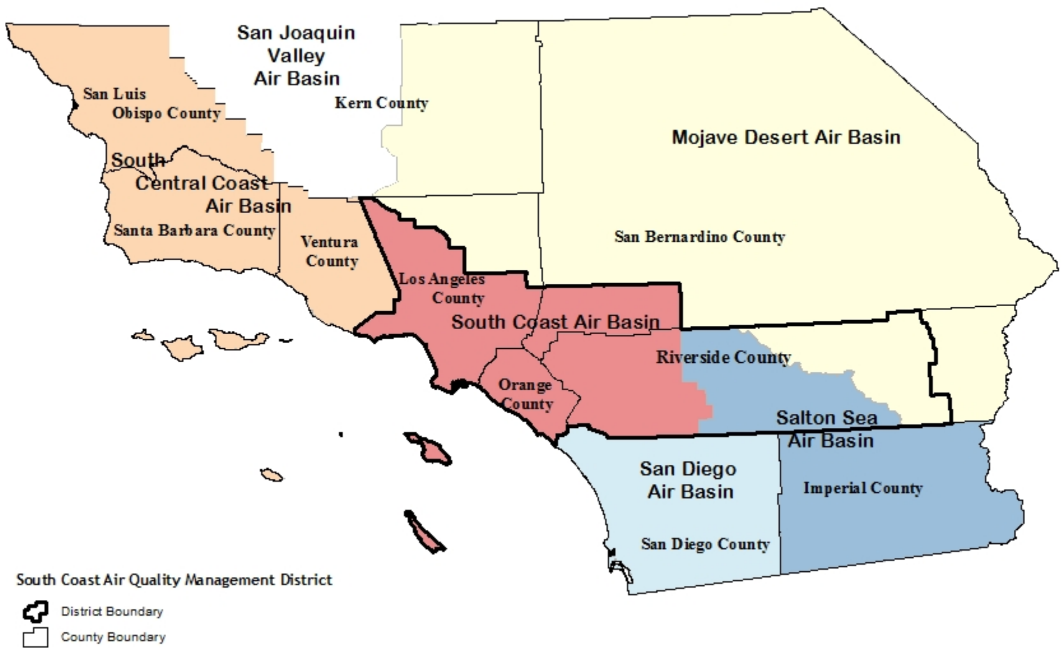


Figure 1-1
Southern California Air Basins

PROJECT BACKGROUND

Prior to the adoption of Rule 1469, chromium electroplating (hard and decorative) and chromic acid anodizing processes were originally regulated by Rule 1169 which was first adopted on June 3, 1988 to reduce hexavalent chromium emissions from these operations. However, on October 9, 1998, Rule 1169 was repealed and provisions were adopted instead in Rule 1469 which is part of Regulation XIV that focuses on reducing emissions of various types of toxics and non-criteria pollutants. In addition to facilities that perform chromium electroplating or chromic acid anodizing operations, Rule 1469 also regulates other activities that are generally associated with chromium electroplating and chromic acid anodizing operations.

In 2015, SCAQMD staff initiated rulemaking for PAR 1469 as a result of data collected from conducting air monitoring and sampling near a chromic acid anodizing facility located in Newport Beach in Orange County. SCAQMD staff had been conducting air monitoring near the facility since 2009 and in 2012 and 2013, levels of hexavalent chromium increased. These increases triggered a series of further evaluations which identified sources within the facility as having elevated levels of hexavalent chromium emissions. As SCAQMD staff continued to conduct additional monitoring and sampling, and engineering evaluations, the following conditions were identified as contributing to the elevated hexavalent chromium levels: 1) cross-drafts in the building that housed the chromic acid anodizing process allowed emissions to flow out of the building and interfered with the collection efficiency of the air pollution control equipment; and 2) high hexavalent chromium emissions were detected from a process tank, a heated sodium dichromate seal tank, that was not currently regulated under Rule 1469. SCAQMD and the facility entered into a stipulated Order for Abatement requiring the facility to <u>cease operating their tanks</u>

containing chromium solutions ~~shut down~~ when ambient monitors detect a rolling average exceeding a specified level of hexavalent chromium. As a result, the facility implemented changes to address their hexavalent chromium emissions. In particular, additional air pollution control equipment was installed on their chromic acid anodizing process line (including the heated sodium dichromate seal tank). Also, the facility constructed a building enclosure with negative air that was vented to air pollution control equipment. After these key improvements were implemented, the average annual concentrations of hexavalent chromium dropped steadily from 2013 to 2016. However, average emissions in 2017 slightly increased above previous years, to just below 0.4 nanograms per cubic meter (ng/m^3). This increase in hexavalent chromium emissions may have occurred as a result of construction work involving concrete demolition and removal of the rubble from the facility.

In 2015, SCAQMD rules staff began visiting other Rule 1469 facilities to get a better understanding of current operating conditions, to observe the different types of building enclosures and housekeeping practices, and to evaluate other process tanks that can also be sources of hexavalent chromium emissions similar to the heated sodium dichromate seal tank. About the same time as the rule development process for PAR 1469, SCAQMD staff was separately conducting air monitoring in the city of Paramount to investigate potential sources of hexavalent chromium near a metal forging facility. In October 2016, SCAQMD expanded its monitoring network in Paramount and began monitoring near a chromic acid anodizing facility. Initial results of hexavalent chromium emissions were measured at 26 ng/m3 near that facility. Additional monitoring and sampling were conducted and as was observed with the facility, a heated sodium dichromate seal tank combined with cross-drafts allowing emissions to flow directly out of the facility's building were some of the sources that contributed to the high measurements of hexavalent chromium.

The combination of data from conducting ambient monitoring, sampling, and emissions testing indicated that the application of heat and/or air sparging can cause hexavalent chromium emissions from the tank and emissions will increase as the concentration of hexavalent chromium in the tank and the temperature increases. Since these activities were not previously known to be sources of hexavalent chromium emissions, PAR 1469 now addresses these tanks and includes requirements to help minimize the release of fugitive emissions from these operations such as building enclosures, best management practices, and housekeeping provisions. PAR 1469 also has provisions to ensure continuous proper operation of point source air pollution control equipment and contingency provisions to add air pollution control equipment for a building enclosure for any facility that has repeated non-compliance of the point source emission requirements.

PROJECT DESCRIPTION

The purpose of PAR 1469 is to further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations. PAR 1469 proposes new requirements for hexavalent chromium~~-containing~~ tanks, such as heated sodium dichromate seal tanks, that are currently not regulated under Rule 1469. The proposal requires the installation of air pollution control equipment for hexavalent chromium~~-containing~~ tanks that have the potential to emit hexavalent chromium. In addition, PAR 1469 includes requirements to conduct periodic source testing, to conduct parameter monitoring of air pollution control equipment, to operate all hexavalent chromium~~-containing~~ tanks in building enclosures, and to employ additional housekeeping and best management practices for all hexavalent chromium~~-containing~~ tanks. Proposed requirements include triggered provisions for installing a permanent total enclosure vented to air pollution control equipment in the event of non-compliance with specific source testing or monitoring requirements. PAR 1469 also revises existing requirements to reduce surface tension limits that prohibit the use of chemical fume suppressants (CFS) that contain perfluorooctane sulfonic acid in order to be consistent with the United States Environmental Protection Agency (U.S. EPA) National Emission Standards for Hazardous Air Pollutants (NESHAP)[8] for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks. SCAQMD staff is incorporating provisions to encourage use of alternative plating and anodizing techniques that minimize or eliminate the use of hexavalent chromium~~ and~~ including provisions for phasing out the use of a revised certification process by SCAQMD and the California Air Resources Board (CARB) for certain chemicals that are used in CFS that have toxicity concerns.

The following is a detailed summary of the key elements contained in PAR 1469. A draft of PAR 1469 can be found in Appendix A.

Purpose – subdivision (a)
New subdivision (a) has been added to clarify that PAR 1469 is designed to reduce hexavalent chromium emissions from facilities that perform chromium electroplating or chromic acid anodizing operations, and other activities that are generally associated with chromium electroplating and chromic acid anodizing operations.

Applicability – subdivision (b)
Subdivision (b) has been revised to clarify that PAR 1469 applies to the owner or operator of any facility performing chromium electroplating or chromic acid anodizing by removing references to SCAQMD Rules 1401 and 1401.1 and chromium electroplating/chromic acid anodizing kits.

Definitions – subdivision (c)
Subdivision (c) removes or modifies existing definitions and adds new definitions of terms used throughout PAR 1469:

- ADD-ON AIR POLLUTION CONTROL DEVICE (modified)
- ADD-ON NON-VENTILATED AIR POLLUTION CONTROL DEVICE (new)
- AIR POLLUTION CONTROL TECHNIQUE (modified)
- APPROVED CLEANING METHOD (new)
- ASSOCIATED PROCESS TANK (new)
- BARRIER (new)
- BREAKDOWN (removed)
- BUILDING ENCLOSURE (new)
- ~~EARLY EDUCATION CENTER (new)~~
- ENCLOSURE OPENING (new)
- ~~FREEBOARD HEIGHT (new)~~
- FUGITIVE EMISSIONS (modified)
- HIGH EFFICIENCY PARTICULATE ARRESTORS (HEPA) (modified)

8 National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63 Subpart N. https://www.epa.gov/stationary-sources-air-pollution/national-emission-standards-hazardous-air-pollutants-neshap-9

- ~~HIGH EFFICIENCY PARTICULATE ARRESTOR (~~HEPA~~)~~ VACUUM (new)
- LOW PRESSURE SPRAY NOZZLE (new)
- MECHANICAL FUME SUPPRESSANT (modified)
- METAL REMOVAL FLUID (new)
- PERFLUROOCTANE SULFONIC ACID (PFOS) BASED FUME SUPPRESSANT (new)
- PERMANENT TOTAL ENCLOSURE (new)
- SCHOOL (modified)
- STALAGMOMETER (modified)
- TANK PROCESS AREA (new)
- TENSIOMETER (modified)
- TIER I HEXAVALENT CHROMIUM~~-CONTAINING~~ TANK (new)
- TIER II HEXAVALENT CHROMIUM TANK (new)
- TIER III HEXAVALENT CHROMIUM TANK (new)
- WEEKLY (modified)

The new definitions for Tier I, ~~and~~ Tier II, and Tier III Hexavalent Chromium~~-Containing~~ Tanks are necessary as many components of PAR 1469 are designed to address previously unregulated tanks that have the potential for hexavalent chromium emissions.

As explained previously, SCAQMD staff sampled a number of tanks and the results showed that some tanks contained high levels of hexavalent chromium even though they are not currently regulated by Rule 1469. ~~To be consistent with the federal NESHAP for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks,~~ SCAQMD staff selected a limit of 1,000 ppm hexavalent chromium because it is consistent with the federal NESHAP for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks that are required to meet specific housekeeping practices.

The definition for a Tier I tank is as follows:

- TIER I HEXAVALENT CHROMIUM~~-CONTAINING~~ TANK means a tank permitted as containing a hexavalent chromium concentration of 1,000 parts per million (ppm) or greater and is not a ~~TIER II HEXAVELENT CHROMIUM CONTAINING TANK~~ Tier II or Tier III Hexavalent Chromium Tank.

There is also a greater concern about any hexavalent chromium~~-containing~~ tank that also operates under heated, air sparged, or electrolytic conditions because hexavalent chromium emissions can be generated outside of the tank. In particular, high concentrations of hexavalent chromium in solution were found in heated sodium dichromate seal tanks and chrome stripping tanks.

Based on SCAQMD sampling and testing data, tanks containing any concentration of hexavalent chromium that are operated at or below 140 degrees Fahrenheit (^{o}F) have not been shown to exhibit elevated hexavalent chromium emissions. ~~Additional sampling and testing data has demonstrated a correlation between temperature and concentration. Elevated temperatures correlated with hexavalent chromium emissions at lower concentrations. Therefore, additional criteria are applied when determining a Tier II Hexavalent Chromium-Containing Tank, as outlined in the following definition:~~

- TIER II HEXAVALENT CHROMIUM~~-CONTAINING~~ TANK means a tank that is operated or permitted to operate by SCAQMD within the range and a corresponding hexavalent chromium concentration ~~containing hexavalent chromium that meets any of the following with the corresponding hexavalent chromium concentrations in~~ specified in Table 1-1:

Table 1-1
Tier II Hexavalent Chromium~~-Containing~~ Tank Parameters

Temperature (° F)	Tier II Tank Concentration (ppm)
≥ 140 to <145	≥ 5,200 to < 10,400
≥ 145 to <150	≥ 2,700 to < 5,500
≥ 150 to <155	≥ 1,400 to < 2,900
≥ 155 to <160	≥ 700 to < 1,600
≥ 160 to <165	≥ 400 to < 800
≥ 165 to <170	≥ 180 to < 400
≥170	≥ 100 to < 200

- TIER III HEXAVALENT CHROMIUM TANK means a tank that is operated or permitted to operate by the SCAQMD within the range of temperatures and corresponding hexavalent chromium concentrations specified in Table 1-2; or
  - Contains a hexavalent chromium concentration greater than 1,000 ppm, and uses air sparging as an agitation method or is electrolytic; or
  - Is a hexavalent chromium electroplating or chromic acid anodizing tank.

Table 1-2
Tier III Hexavalent Chromium~~-Containing~~ Tank Parameters

Temperature (° F)	Tier III Tank Concentration (ppm)
≥ 140 to <145	≥ 10,400
≥ 145 to <150	≥ 5,500
≥ 150 to <155	≥ 2,900
≥ 155 to <160	≥ 1,600
≥ 160 to <165	≥ 800
≥ 165 to <170	≥ 400
≥170	≥ 200

~~Table 1-1~~
~~Tier II Hexavalent Chromium-Containing Tank Definitions~~

~~**Tank Condition**~~	~~**Hexavalent Chromium Concentration**~~
~~Operating temperature between 140°F-150°F~~	~~>1,500 ppm~~
~~Operating temperature between 150°F-160°F~~	~~>500 ppm~~
~~Operating temperature greater than 160°F~~	~~>100 ppm~~
~~Uses air sparging as an agitation method~~	~~>1,000 ppm~~
~~Electrolytic~~	~~>1,000 ppm~~

~~Facilities that conduct chromic acid anodizing may have some tanks that would be considered Tier II tanks based on the concentration of hexavalent chromium and air sparging being the agitation method. However, industry representatives indicated that these tanks would be converted to use mechanical agitation, such as eductors. By modifying the agitation method, the tanks would not be considered a Tier II tank and therefore not require add-on controls~~

Requirements – Subdivision (d)

Subdivision (d) contains the core requirements of PAR 1469. Paragraph (d)(1) has been revised to change the requirement for a separate meter to be hardwired for each hexavalent chromium electroplating or chromic acid anodizing tank instead of for each rectifier.

Paragraph (d)(2) has been revised to clarify two terms: 1) electroplating is referring to chromium electroplating; and 2) anodizing tank is referring to a chromic acid anodizing tank.

New paragraph (d)(4) has been added to require any Tier I, ~~or~~ Tier II, or Tier III Hexavalent Chromium~~-Containing~~ Tank, or any associated process tank to be operated within a building enclosure beginning 90 days after the date of rule adoption. In particular, Tier I, Tier II, or Tier III Hexavalent Chromium Tanks will be required to operate within a building enclosure that meets the definition of "Building Enclosure" which is a permanent building or physical structure, or portion of a building, enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with limited openings to allow access for people, vehicles, equipment, or parts. A room within a building enclosure that is completely enclosed with a floor, walls, and a roof would also meet this definition. ~~existing before rule adoption that undergoes specific modifications to maintain a freeboard height within the range as specified in the most current edition (i.e. at the time the permit application was deemed complete by the SCAQMD) of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists. A modification under this provision includes a dimensional change to the tank. Freeboard height is the vertical distance from the tank bath surface, including liquid or foam, to the lip of the tank with parts and equipment submerged in the tank.~~

Paragraph (d)(5) has been added to require any Tier II or Tier III Hexavalent Chromium Tank to be operated within a building enclosure that meets the requirements of subdivision (e). Under this provision, a Tier I Hexavalent Chromium Tanks would not be required to operate within a building enclosure that meets the additional requirements under subdivision (e) such as limitations on enclosure openings.

Requirements for Building Enclosures for Tier II or Tier III Hexavalent Chromium Tanks – subdivision (e)

New subdivision (e) has been added to establish requirements for operating any Tier II or Tier III Hexavalent Chromium~~-Containing~~ Tanks and associated process tanks within a building enclosure that meets specific requirements under paragraphs (e)(1) through (e)(9) beginning ~~90~~ 180 days after date of rule adoption. While Tier I Hexavalent Chromium Tanks are required to operate within a building enclosure, the building enclosure where a Tier I Hexavalent Chromium Tank is operated is not required to meet the additional requirements in subdivision (e) provided there is no Tier II or Tier III Hexavalent Chromium Tank ~~tank~~ in the same building enclosure. The following summarizes the requirements for building enclosures for Tier II and III Hexavalent Chromium Tanks~~Building enclosures shall meet the following requirements~~:

- New paragraph (e)(1) establishes the requirements for enclosure openings that are allowed for a building enclosure.~~:~~ Under this paragraph, ~~T~~the combined area of all building enclosure openings, including any roof openings for passage of equipment or vents through which fugitive hexavalent chromium emissions can escape from the building enclosure, shall not exceed ~~three percent~~ 3.5% of the building enclosure envelope, which is calculated as the total surface area of the building enclosure's exterior walls, floor and horizontal projection of the roof on the ground. This requirement is based on U.S. EPA's Method 204 for Permanent Total Enclosures; however, unlike Method 204, building enclosures under PAR 1469 are not required to operate under negative air conditions. As such, even though the size allowance as required by Method 204 for openings in the building enclosure is 5%, to compensate for the absence of venting a building enclosure to an add-on air pollution control device, PAR 1469 proposes a size allowance of 3.5% instead. Information on calculations for the building enclosure envelope, including locations and dimensions of openings counted toward the ~~three percent~~3.5% allowance are required to be provided in the compliance status reports pursuant to paragraphs (p)(2) and (p)(3) (see description under subdivision (p)).

  PAR 1469 identifies the type of methods that can be used in determining what comprises a building's opening and the amount that should be counted towards the 3.5% enclosure opening allowance. As specified in paragraph (e)(1), openings that close or use one or more of the following methods for the enclosure opening shall not be counted toward the combined area of all enclosure openings:

  - ✓ Door that automatically closes;
  - ✓ Overlapping plastic strip curtains;
  - ✓ Vestibule;
  - ✓ Airlock system; or
  - ✓ Alternate method to minimize the release of fugitive emissions from the building enclosure that the owner or operator can demonstrate to the Executive Officer an equivalent or more effective method(s) to minimize the movement of air within the building enclosure. This provision allows the owner or operator to develop other low-cost methods that were not identified during the rulemaking.

- New paragraph (e)(2) establishes requirements for eliminating or minimizing cross-draft that can occur when openings at opposite ends of building enclosure are open. Under this paragraph, the owner or operator are required to ~~E~~ensure that any building enclosure opening that is on opposite ends of the building enclosure where air movement can pass through are not simultaneously open except during the passage of vehicles, equipment or people, not to exceed two hours, by either closing or using one or more of the methods for the enclosure opening(s) on one of the opposite ends of the building enclosure specified in subparagraphs (e)(1)(A) through (e)(1)(E). To meet this requirement, the use of a barrier, such as large piece of equipment, a wall, or any other type of barrier that restricts air movement from passing through the building enclosure would also be allowed.~~ when one or more of the following methods are implemented:~~

  - ~~✓ Automated roll-up door;~~
  - ~~✓ Overlapping plastic strip curtain;~~
  - ~~✓ Vestibule doors;~~
  - ~~✓ Airlock system; or~~
  - ~~✓ Alternative method to minimize the release of fugitive hexavalent chromium emissions from the building enclosure that the owner or operating can demonstrate to the Executive Officer as (an) equivalent or more effective method(s) to minimize the movement of air within the building enclosure.~~

- New paragraph (e)(3) establishes additional requirements for enclosure openings that are facing a sensitive receptor or school.~~:~~ Except for the movement of vehicles, equipment or people, this paragraph requires any building enclosure opening to be closed or minimized by using any of the methods listed under paragraph (e)(1), ~~(or use any of the methods listed above)~~ that directly opens towards ~~a~~the nearest: 1) sensitive receptor, with the exception of a school, ~~or early education center~~ that is located within ~~100~~1,000 feet, as measured from the property line of the sensitive receptor~~, school, or early education center~~ to the building enclosure opening~~.~~; and 2) school that is located within 1,000 feet, as measured from the property line of the school or to the building enclosure opening. Further, if there are multiple sensitive receptors that are located within 1,000 feet of an enclosure opening, only the nearest enclosure opening would be required to be closed. Similarly, if there are multiple schools that are located within 1,000 feet of an enclosure opening, only the nearest enclosure opening to the school would be required to be closed. The maximum enclosure openings that would be required to be closed under this paragraph would be two.

- New paragraph (e)(4)~~:~~ establishes requirements for enclosure openings in a roof. Specifically, the owner or operator is required to ~~E~~ensure that all roof openings that are located within 15 feet from the edge of any Tier II or Tier III Hexavalent Chromium~~-Containing~~ Tank are closed, except for roof openings that are used to allow access to equipment or parts, ~~or~~ provide intake air for a building enclosure that does not create air velocities that impact the collection efficiency of a ventilation system for an add-on air pollution control device, or roof openings that are equipped with a HEPA filter or other air pollution control device. It should be noted that the proposed definition of enclosure opening in paragraph (c)(22) does not include stacks, ducts, and openings to accommodate stacks and ducts.

- ~~New paragraph (e)(5): Prohibit operation of any device located on the roof of any building enclosure that pulls air from the building enclosure to the outdoor air unless the air is vented to an add-on air pollution control device that is fitted with HEPA filters.~~

- ~~New paragraph (e)(6): Inspect any building enclosure at least once a calendar month for breaks or deterioration that could cause or result in fugitive emissions.~~

- New paragraph (e)~~(7)~~(5) establishes requirements when there is a breach in a building enclosure that is located near a Tier II or Tier III Hexavalent Chromium tank.~~:~~ A breach can be a break, rupture, crack, hole, large gap in the building enclosure. Under this paragraph, the owner or operator is required to ~~R~~repair any ~~breaks or deterioration~~ breach in a building that is located within 15 feet of the edge of any Tier II or III tank ~~that could or results in fugitive hexavalent chromium emissions from any building enclosure~~ within 72 hours of discovery. ~~An extension may be granted if the owner or operator can substantiate that the repair will take longer than that 72 hours and temporary measures are implemented that ensure no fugitive emissions results from a break.~~ The provision establishes who to call and the procedures for a time extension to repair the breach, if needed.

- ~~New paragraph (e)(8): PAR 1469 requires that a building enclosure design should not conflict with any other agency's requirements, and instead should be constructed in a manner that is compliant with all agencies. This may require the owner or operator of a facility to install additional equipment or modify the existing structure. If any other agency requirements conflict, the owner or operator shall notify the Executive Officer in writing within 30 days of rule adoption to explain which SCAQMD building enclosure requirements the facility cannot comply with, and the alternatives that the facility would implement to minimize the release of fugitive emissions.~~

- New paragraph (e)(6) establishes requirements for notifying the Executive Officer and submitting a building enclosure compliance plan in the event that the owner or operator is unable to modify a building enclosure to comply with the requirements in paragraphs (e)(1) through (e)(4) because of conflicts with safety or local building requirements such as Cal-OSHA/Federal OSHA's requirements, or other municipal codes or agency requirements related directly to worker safety subject to Executive Officer approval.

- New paragraph (e)(7) establishes the procedures for the notification of approval or disapproval of and subsequent revisions to the Building Enclosure Compliance Plan submitted pursuant to paragraph (e)(6).~~New paragraph (e)(9):~~ Under new paragraph (e)(8) ~~T~~the owner or operator will have 90 days upon receiving approval from the Executive Officer to implement the approved alternative compliance measures. The owner or operator of a facility that implements and maintains the approved alternative compliance measures shall have met the applicable requirements specified in paragraphs (e)(1) through (e)(4~~5~~).

- New paragraph (e)(9) proposes to allow an owner or operator that has submitted an application to install an add-on air pollution control device to control either a Tier II or Tier III Hexavalent Chromium Tank(s) to be exempt from paragraphs (e)(1) through (e)(4) until such time that the add-on air pollution control device is installed.

Housekeeping Requirements – subdivision (f)

The housekeeping requirements that were originally in paragraph (d)(4) have been moved to its own dedicated subdivision (f) and clarified to apply to chromium electroplating and chromic acid anodizing operations. Amended provisions include the following:

- Revised paragraph (f)(3) requires the use of an approved cleaning method as defined in paragraph (c)(6) for conducting cleaning. Paragraph (f)(3) also clarifies that a drip tray or other containment device can be used to capture any liquid or solid material containing hexavalent chromium.
- Revised paragraph (f)(4) clarifies that approved cleaning method should be used when cleaning surfaces within certain areas and modifies the frequency of conducting cleaning to occur weekly instead of "at least once every seven days."~~requires the use of an approved cleaning method to clean surfaces within the enclosed storage area, open floor area, walkways around the Tier I or Tier II Hexavalent Chromium-Containing Tank(s), or any surface potentially contaminated with hexavalent chromium or surfaces that potentially accumulate dust at least daily.~~
- Revised paragraph (f)(5) requires ~~that~~ containers holding chromium or chromium-containing waste material shall be kept closed at all times except when filling or emptying.
- Paragraph (f)(6) -requires that on each day when buffing, grinding, or polishing activities occur, the owner or operator shall clean floors within 20 feet of a buffing, grinding, or polishing workstation within one hour of the end of the last operating shift of when buffing, grinding, or polishing are conducted. The requirements of this paragraph shall not apply to owner or operators that utilize a metal removal fluid to control to buffing, grinding, or polishing operations. ~~has been added to address the cleaning requirements in the buffing, grinding, or polishing area. On each day when buffing, grinding, or polishing, the owner or operator shall clean floors within 20 feet of a buffing, grinding, or polishing workstation and any entrance/exit point within one hour of the end of the last operating shift of when buffing, grinding, or polishing are conducted. Previous requirements pertaining to establishing a physical barrier between buffing, grinding, or polishing and where chromium electroplating or chromic acid anodizing have been moved to paragraph (g)(6) in subdivision (g) - Best Management Practices. Previous requirements pertaining to compressed air cleaning have been moved to paragraph (g)(7) in subdivision (g) - Best Management Practices.~~
- New paragraph (f)(7) has been added to require owners or operators to remove any flooring in the tank process areas that is made of fabric or fibrous material such as carpets or rugs where hexavalent chromium materials can be trapped. Examples of acceptable flooring material are wooden floor boards and other solid material that can be cleaned and maintained.
- New paragraph (f)(8) has been added to require owners or operators to prevent the generation of fugitive emissions ~~chromium~~ prior to and during the cutting of roof surfaces by implementing the following requirements ~~the installation, modification, or removal of any add-on air pollution control device~~:
  - Prior to being ~~disturbed~~ cut, roof surfaces shall be cleaned by using a HEPA vacuum; and
  - To minimize fugitive emissions during cutting activities, method(s) such as a temporary enclosure and/or HEPA vacuuming shall be used; and

- ~~Any and all roof surfaces that remain stained after completion of the initial roof cleaning shall be treated by encapsulation or removed through controlled demolition;~~
- ~~All construction and demolition activities shall be conducted within a temporary total enclosure that is vented to HEPA filtration;~~
- ~~All waste material generated by abatement, construction, or demolition shall be disposed as hazardous waste; and~~
- Notify the District at least 48 hours prior to the commencement of any work being done by calling 1-800-CUT-SMOG.

- New paragraph (f)(9) requires that if a HEPA vacuum is used to comply with housekeeping provisions of subdivision (f), that the HEPA filter is free of tears, fractures, holes or other types of damage, and securely latched and properly situated in the vacuum to prevent air leakage from the filtration system.

Previous requirements pertaining to establishing a physical barrier between buffing, grinding, or polishing and where chromium electroplating or chromic acid anodizing have been moved from subparagraph (c)(4)(F) to subdivision (g) - Best Management Practices. Previous requirements pertaining to compressed air cleaning in subparagraph (c)(4)(G) have also been moved to subdivision (g) - Best Management Practices.

Best Management Practices – subdivision (g)

New subdivision (g) has been added which establishes Best Management Practices that prescribe how an owner or operator shall conduct chromium electroplating or chromic acid anodizing and other ancillary operations to prevent the release or generation of fugitive emissions.

Revised paragraph (g)(1) clarifies the requirements for minimizing drag-out for automated and non-automated lines.~~has been expanded to minimize the dragout occurring outside of tanks conducting chromium electroplating or chromic acid anodizing to include Tier I and Tier II Hexavalent Chromium-Containing Tanks.~~ For facilities with automated lines, containment equipment other than drip trays may be utilized to prevent hexavalent chromium-containing liquid from falling through the space between tanks. Additional requirements ~~additionally~~ to clean the residue on the drip tray or other ~~equipment~~ devices used for containment are also included. For facilities without automated lines, paragraph (g)(1) clarifies that parts need to be handled in a manner that does not cause hexavalent chromium-containing liquid to ~~drip~~ drop on the floor~~outside of the tank unless the liquid is captured by a drip tray or other containment device~~.

New paragraph (g)(2) prohibits owners or operators from spray rinsing parts or equipment that were previously in a Tier II or Tier III Hexavalent Chromium Tank, unless the part or equipment are fully lowered inside a tank where the overspray and all of the liquid is captured inside the tank. The requirements in paragraph (g)(2) will go into effect 90 days after date of adoption.~~adds requirements for the spray rinse of parts or equipment. Owners or operators may spray rinse the part or equipment if they are fully lowered inside a tank where the overspray and all of the liquid is captured inside the tank.~~ If an owner or operator chooses to spray rinse above a process tank, they must ensure that any hexavalent chromium-containing liquid is captured and returned to the tank, and:

- Install splash guard(s) at the tank that is free of holes, tears or openings. Splash guards shall be cleaned daily, such that there is no accumulation of visible dust or residue potentially contaminated with hexavalent chromium; or
- For tanks located within a process line utilizing an overhead crane system that would be restricted by the installation of splash guards, a low pressure spray nozzle may be used instead and operated in a matter that water flows off of the part or equipment.

Effective 60 days after the date of adoption, new paragraph (g)(3) requires owners or operators to clearly label each tank within the tank process area with a tank number or other identifier, bath contents, maximum concentration (ppm) of hexavalent chromium, operating temperature range, and any agitation method used, and designation of whether it is a Tier I, Tier II, or Tier III Hexavalent Chromium Tank. Tank labeling will help operators as well as SCAQMD inspectors identify Tier I, Tier II, and Tier III Hexavalent Chromium Tanks and to ensure the appropriate operating conditions are maintained.

~~New paragraph (g)(4) requires that the owner or operator of a Tier II Hexavalent Chromium-Containing Tank that is subject to paragraph (d)(4), shall make inch markings on the interior of the tank, including markings to indicate the acceptable freeboard height range as specified in the most current edition (i.e. at the time the permit application was deemed complete by the SCAQMD) of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists from the lip of the tank.~~

Effective 90 days after the date of adoption, new ~~P~~paragraph (g)(~~5~~4) requires all buffing, grinding, and polishing operations to take place within a building enclosure.

New paragraph (g)(5) requires the relocation of existing requirement to have a barrier that separates the buffing, grinding, or polishing area within a facility from the chromium electroplating or chromic acid anodizing operation. ~~relocated from the housekeeping requirements that were originally in paragraph (d)(4) and requires all buffing, grinding, and polishing operations to take place within a building enclosure~~.

~~Paragraph (g)(6) was relocated from the housekeeping requirements that were originally in paragraph (d)(4) and requires a barrier to be installed that separates the buffing, grinding, or polishing area within a facility from the chromium electroplating or chromic acid anodizing operation.~~

New paragraph (g)(~~7~~6) prohibits compressed air cleaning or drying within 15 feet of all Tier II or Tier III Hexavalent Chromium Tank(s) ~~any chromium electroplating or chromic acid anodizing operation~~ unless a barrier separates those areas from compressed air cleaning or drying operations, or the compressed air cleaning or drying is conducted in a permanent total enclosure. A tank wall may function as a barrier as long as parts are compressed air cleaned or dried below the lip of the tank.

Add-On Air Pollution Control Devices and Emission Standards – subdivision (h)

PAR 1469 creates ~~a~~ new subdivision (h) which contains requirements regarding add-on air pollution control devices and emission standards.

Paragraph (h)(1) contains an existing prohibition for removing air pollution control equipment unless it is replaced with an air pollution control technique that meets the requirements in PAR 1469, Table 1 – Hexavalent Chromium Emission Limits for Hexavalent Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks.

Sub~~P~~paragraph (h)(2)(A) ~~now~~ consolidates the emission standards and control requirements for existing, modified, and new hexavalent hard and decorative chromium electroplating and chromic acid anodizing facilities, which has been reproduced in Table 1-3. Additionally, all effective dates for notification to the Executive Officer, emission standards, and control requirements were removed as these dates are now past and in full effect.

Table 1-3
Hexavalent Chromium Emission Limits for Existing Tanks

Facility Type	**Distance to Sensitive Receptor (~~meters~~feet)**	**Annual Permitted Amp-Hrs**	**Emission Limit (mg/amp-hr)**	**Required Air Pollution Control Technique**
Existing Facility	< 330[1] ~~< 100~~	≤ 20,000	0.01	Use of Certified Chemical Fume Suppressant at or below the certified surface tension[3]. ~~CFS. Alternatively, a facility may install an add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s) that controls hexavalent chromium emissions to below 0.0015 mg/amp-hr.~~
Existing Facility	< 330[1] ~~< 100~~	> 20,000	0.0015[2]	Add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s).
Existing Facility	< 330[1] ~~> 100~~	≤ 50,000	0.01	Use of Certified Cemical Fume Suppressant at or below the certified surface tension[3]. ~~CFS. Alternatively, a facility may install an add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s) that controls hexavalent chromium emissions to below 0.0015 mg/amp-hr.~~
Existing Facility	< 330[1] ~~> 100~~	> 50,000 and ≤ 500,000	0.0015[2]	Use of an air pollution control technique that controls hexavalent chromium. ~~approved by the Executive Officer.~~
Existing Facility	< 330[1] ~~> 100~~	> 500,000	0.0015[2]	Add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s).
Modified Facility	Any	Any	0.0015[2]	Using an add-on air pollution control device(s), or an approved alternative method pursuant to subdivision (i). ~~to control hexavalent chromium emissions.~~
New Facility	Any	Any	0.0011[2]	Using a HEPA add-on air pollution control device, or an approved alternative method pursuant to subdivision (i). ~~to control hexavalent chromium emissions.~~

1 Distance shall be measured, rounded to the nearest foot, from the edge of the chromium electroplating or chromic acid anodizing tank nearest the sensitive receptor (for facilities without add-on air pollution control devices), or from the stack or centroid of stacks (for facilities with add-on air pollution control devices), to the property line of the nearest sensitive receptor. The symbol < means less than or equal to. The symbol > means greater than.

2 As demonstrated by source test requirements under subdivision (k).

3 Alternatively, a facility may install an add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s) that controls hexavalent chromium emissions to below 0.0015 mg/amp-hr as demonstrated through source test requirements under subdivision (k).

Subparagraph (h)(2)(B~~b~~) retains the siting requirements for New Chromium Electroplating and Chromic Acid Anodizing Facilities.

All requirements to conduct a facility-wide screening health risk assessment have been removed in this subdivision because these assessments are currently addressed by SCAQMD’s ongoing program for new source review of toxics (Rule 1401 and 1401.1) and implementation of AB 2588 (Rule 1402).

Paragraph (h)(3) applies to decorative chromium electroplating processes using a trivalent chromium bath. PAR 1469 ~~removes~~ revises the requirement to utilize a certified~~-CFS~~ chemical fume suppressant to remove the word “certified,” as certification at the ~~federal and~~ state level is only~~ require this of~~ for hexavalent chromium electroplating and chromic acid anodizing operations.~~,~~ H~~h~~owever, paragraph (h)(3) adds that CFS cannot contain PFOS for consistency with the NESHAP for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks.

Emission Controls and Standards for Tier III Hexavalent Chromium~~-Containing~~ Tanks

Paragraph (h)(4) adds new requirements for Tier III Hexavalent-Chromium ~~Containing~~ Tanks that are not chromium electroplating or chromic acid anodizing tanks. These tanks are required to be vented to an add-on air pollution control device or an approved alternative compliance method pursuant to subdivision (i). These tanks must comply with the following specific hexavalent chromium emission limits~~ and must meet the following standards~~:

- For existing or modified facilities, 0.0015 mg/amp-hr, if any tank(s) ~~that are~~ vented to an air pollution control device are electrolytic; or
- For new facilities, 0.0011 mg/amp-hr, if any tank(s) ~~that are~~ vented to an air pollution control device are electrolytic; or
- 0.20 mg/hr, if all tanks that are vented to an add-on air pollution control device are not electrolytic and the ventilation system has a maximum exhaust rate of 5,000 cfm or less; or
- 0.004 mg/hr-ft^2, with the applicable surface area based on the tank surface area of all Tier III Hexavalent Chromium~~-Containing~~ Tank(s) and other tanks required to be vented to an add-on air pollution control device with a SCAQMD Permit to Operate, provided all tanks are not electrolytic, if the ventilation system has a maximum exhaust rate of greater than 5,000 cfm; or
- ~~0.004 mg/hr-ft^2, with the applicable surface area based on the tank surface area of all Tier II Hexavalent Chromium-Containing Tank(s) and other tanks required to be controlled by SCAQMD Permits to Operate vented to an add-on air pollution control device, if all tanks that are vented to the add-on air pollution control device are located in a permanent total enclosure.~~

For existing and new facilities with non-chromium electroplating or chromic acid anodizing Tier III tanks that are electrolytic, the emission standard is consistent with the emission limits in Table 1-3, for chromium electroplating and chromic acid anodizing tanks.

The emission limit for non-electrolytic tanks is based on review of 80 source tests conducted on existing add-on air pollution control equipment venting chromium electroplating and chromic acid anodizing tanks. The source tests were conducted from 1999 through 2016. Of the 80 source tests, approximately 20 source tests were not used in the analysis as they either vented multiple electroplating or anodizing tanks or the source test was conducted with very high amperes that were not representative of the normal operations. The average emission rate of the tanks as found by ~~for~~ the remaining source tests was 0.18 mg/hr. Additionally, due to the fact that uncontrolled hexavalent chromium emissions from non-electrolytic tanks are typically much lower than that of electroplating and anodizing tanks, staff believes that these non-chromium electroplating or chromic acid anodizing Tier III tanks can meet an emission limit of 0.20 mg/hr.

Subparagraph (h)(4)(B) establishes the compliance schedule for submitting permit applications for add-on pollution control devices for Tier III Tanks. For Tier III Hexavalent Chromium~~-Containing~~ Tanks that are in operation prior to date of rule adoption, the owner or operator shall submit a permit application to the SCAQMD for the add-on air pollution control devices based on the primary electrolytic operation conducted at the facility as specified below in Table 1-4.

Table 1-4
Permit Application Submittal Schedule for Add-On Air Pollution Control Device

Electrolytic Process at the Facility	Compliance Date for Permit Application Submittal for Add-on Air Pollution Control Device
Chromic Acid Anodizing	[180 Days after Date of Adoption]
Hard Chromium Electroplating	[365 Days after Date of Adoption]
Decorative Chromium Electroplating	[545 Days after Date of Adoption]

If a facility has multiple chromium electrolytic processes occurring, the earliest compliance date would apply to the facility.

~~The add-on air pollution control device shall be installed and operated no later than one year after a Permit to Construct is issued.~~ A source test is required to be conducted prior to the issuance of a SCAQMD Permit to Operate the add-on air pollution controls. Also, ~~B~~beginning no later than 30 days after rule adoption until the subject add-on air pollution control device is installed, the owner or operator is required to cover the subject tank no later than 30 minutes after ceasing operation of the tank. Tank covers are to be free of holes, tears, or gaps and handled in a manner that does not lead to fugitive emissions.

Subparagraph (h)(4)(C) establishes the compliance dates that an owner or operator a facility is required to install an add-on air pollution control device, implement an alternative compliance method or Hexavalent Chromium Phase-Out Plan to meet the hexavalent chromium emission limits specified in subparagraph (h)(4)(A). The owner or operator of a facility is required to install an add-on air pollution control device to meet the requirements under subparagraph (h)(4)(A) no later than 12 months after a Permit to Construct for the add-on air pollution control device has been issued by the Executive Officer. If an owner or operator elects to meet the requirements of (h)(4)(A) by implementing an approved alternative compliance method the owner or operator shall comply with the timeframe specified in the approved alternative compliance method. Further, if an owner or operator elects to phase out the use of hexavalent chromium in a chromium electroplating or chromic acid anodizing tank the approved Hexavalent Chromium Phase-Out Plan shall be implemented no later than two years after it is approved by the Executive Officer.

Under subparagraph (h)(4)(D), ~~O~~owners or operators shall not be subject to the requirements of venting a Tier III Hexavalent Chromium~~-Containing~~ Tank to an add-on air pollution control device if the uncontrolled hexavalent chromium emission rate is less than 0.2 mg/hr~~ the applicable emission rate limit of subparagraph (h)(4)(A)~~, as demonstrated by a SCAQMD-approved source test conducted pursuant to the Technical Guidance Document for *Measurement of Hexavalent Chromium Emissions from Chromium Plating and Chromic Acid Anodizing Operations for Certification of Wetting Agent Chemical Mist Suppressant Subject to SCAQMD Rule 1469.*

Effective 90 days after the date of rule adoption, new paragraph (h)(5) requires Tier II Hexavalent Chromium Tanks to utilize a tank cover, mechanical fume suppressant, or other method approved by the Executive Officer. Alternatively, the owner or operator may meet the emission reduction requirements of a Tier III Hexavalent Chromium Tank specified in subparagraphs (h)(4)(A) and (h)(4)(B).

Paragraph (h)(~~5~~6) requires facilities to operate add-on air pollution control devices at the applicable minimum hood induced capture velocity specified in the most current edition (i.e., at the time the permit application was deemed complete by SCAQMD) of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by American Conference of Governmental Industrial Hygienists.

Alternative Compliance Methods for New, Modified, and Existing Hexavalent Decorative and Hard Chromium Electroplating and Chromic Acid Anodizing Facilities – Subdivision (i)

Subdivision (i) retains the option for affected equipment to operate under an alternative compliance method to meet the emission limits specified in paragraphs (h)(2) and (h)(4). The alternative compliance option is available for existing, modified, and new facilities if the owner or operator can demonstrate that the alternative method(s) is enforceable, provides an equal or greater hexavalent chromium reduction, or greater risk reduction than compliance with the emission limits of specified in paragraphs (h)(2) and (h)(4). An owner or operator that elects to use an alternative method must submit an SCAQMD permit application that includes information specified in PAR 1469, Appendix 7 - Information Demonstrating an Alternative Method(s) of Compliance Pursuant to Subdivision (i).

PAR 1469 removes the following paragraphs as they refer to past interim compliance options:

- Alternative Interim Compliance Options – Inventory and Health Risk Assessment
- Alternative Interim Compliance Options – Emission Reduction Plan
- Alternative Interim Compliance Options – Maximum Installed Controls
- Alternative Interim Compliance Options – Facility wide Mass Emission Rate
- Alternative Interim Compliance Options – Alternative Standards for Existing Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities with Low Annual Ampere Hour Usage

The alternative interim compliance options are no longer options and facilities will be required to comply with the respective requirements specified in subdivision (h). ~~Subdivision (i) does, however, retain the option to operate under an alternative compliance method as currently allowed for in Rule 1469. The alternative compliance option is available for existing, new, and modified facilities if the owner or operator can demonstrate that the alternative method(s) is enforceable, provides an equal or greater hexavalent chromium reduction, or greater risk reduction than would direct compliance with the requirements of paragraph (h).~~

Training and Certification – Subdivision (j)

Training and certification requirements were previously located in paragraph (c)(7). This section has been moved to its own dedicated subdivision (j)~~ with no modifications to existing requirements~~.

Source Test Requirements and Test Methods – Subdivision (k)

The subdivision has been renamed and relocated from subdivision (e) to subdivision (k). Currently, Rule 1469 only requires a source test either by 2009 or during installation. ~~SCAQMD staff believes that~~ Periodic source tests are necessary to verify the continued performance of both the capture and control of hexavalent chromium emissions for add-on air pollution control devices specified in this rule. Although parameter monitoring can verify the operation of specific elements of the add-on air pollution control device, source tests allows for the comprehensive evaluation of the system.

~~The owner or operator using air pollution control techniques to comply with applicable emission limits of this rule shall conduct an initial source test to demonstrate compliance with applicable emission standards, with subsequent periodic source testing or emissions screening testing at least once every 36 months thereafter as specified in paragraph (k)(3). Failure to retest following a failed or unsuccessful source test within 60 days shall constitute a violation of this rule.~~

The current version of Rule 1469 only requires an initial source test. Paragraph (k)(1) clarifies the source test requirements for an initial source test and establishes additional requirements to conduct subsequent source tests. Periodic source testing is needed to ensure that add-on pollution control devices are operating properly and achieving the required emission limit. Subparagraph (k)(1)(A) establishes the schedule for conducting initial and subsequent source tests to meet the emission limits in paragraphs (h)(2) and (h)(4) (see PAR 1469, Table 3: Source Tests Schedule). In general, facilities with greater than 1,000,000 permitted annual amp-hours are required to source test no later than 60 months from the day of the most recent source test that demonstrates compliance with all applicable requirements and facilities with less than or equal to 1,000,000 permitted annual amp-hours are required to source test no later than 84 months from the day of the most recent source test that demonstrates compliance with all applicable requirements.

Subparagraph (k)(1)(B) allows an owner or operator to submit a written request for additional time to conduct the initial source test. This subparagraph specifies the procedures of when the Executive Officer must be notified, the information that must be included in the notification, and the timing for approval to allow use of this provision.

Subparagraph (k)(1)(C) establishes provisions that allow an owner or operator to use an existing source test that was conducted after January 1, 2015 for compliance with provision for the initial source test provided the applicable emission limits in subdivision (h) are demonstrated, operating conditions during the source test are representative of current operating conditions, and the appropriate test methods were used.

Subparagraph (k)(1)(D) establishes provisions for when a source test was conducted after January 1, 2015, but the source test was not approved. Under this subparagraph, provided the owner or operator submits the source test to the Executive Officer for approval no later than 30 days after date of adoption, the Executive Officer will review the source test to verify if it can be used and meets the same criteria subparagraph (k)(1)(C).

Subparagraph (k)(1)(E) establishes provisions that require an owner or operator that is relying on a source test conducted after January 1, 2015 under subparagraph (k)(1)(C) to conduct the first subsequent source test no later than January 1, 2024 and then follow the source testing schedule for subsequent source tests as specified in PAR 1469, Table 3: Source Tests Schedule.

Subparagraph (k)(1)(F) clarifies that an owner or operator that elects to meet an emission limit specified in a paragraph (h)(2) using a certified wetting agent chemical fume suppressant or a approved alternative to a wetting agent chemical fume suppressant shall not be subject to the requirements in subparagraph (k)(1)(A).

Paragraph (k)(2) clarifies requirements for approved test methods, test methods for add-on non-ventilated air pollution control devices, and methods to measure surface tension. Emissions testing for add-on non-ventilated air pollution control devices shall be conducted in accordance with PAR 1469, Appendix 5 – Smoke Test for Add-on Non-Ventilated Air Pollution Control Device.

Paragraph (k)(3) proposes to allow the use of emissions screening tests in lieu of conducting a source test to comply with the *subsequent* source test requirements. Subparagraph (k)(3)(A) will allow the owner or operator to conduct an emission screening of hexavalent chromium provided that the emissions screening test shall:

- consist of one run to evaluate the capture and control of hexavalent chromium emissions;
- follow a source test protocol approved by Executive Officer; and
- be representative of the operating conditions during the most recent source test.

Subparagraph (k)(3)(B) proposes to allow an owner or operator with a SCAQMD approved source test conducted after January 1, 2009 to conduct an emission screening to satisfy the requirements of conducting the *initial* source provided the subject source test met the criteria stated above. This subparagraph includes provisions to allow an operator to submit a source test that was conducted after January 1, 2009 for approval.

Within 30 days of receiving the results of the emissions screen test, subparagraph (k)(3)(C) requires the owner or operator to submit the results to the Executive Officer. Under subparagraph (k)(3)(D), the owner or operator will be required to conduct a source test using an approved method within 60 days of conducting an emission screening test that fails the capture efficiency test(s) specified in the source test protocol, exceeds an emission limit specified in the SCAQMD Permit to Operate, or exceeds an emission limit in subdivision (h).

Paragraph (k)(4) defines the information content requirements for source test protocols and includes procedures for when a previously approved source test protocol can be used for conducting subsequent source tests.

~~Paragraph (k)(3) sets forth requirements for source testing and emissions evaluation compliance dates. The initial source test must be conducted 120 days after approval of the initial source test protocol. The due to date to submit an initial source test protocol is based on the facility's permitted annual ampere-hours, with facilities that have higher permitted limits required to submit sooner. A source test conducted after September 1, 2015 may be used to demonstrate compliance with the initial source test requirement. If not previously approved by SCAQMD, the owner or operator shall submit the source test to SCAQMD no later than 30 days after adoption of the rule. The Executive Officer shall notify the owner or operator within 30 days of receiving the source test results if it has demonstrated compliance with applicable emission limits, is representative of the method to control emissions currently in use, and the test was conducted using one of the approved test methods specified in the rule. A facility using a source test to demonstrate compliance with the initial source test requirement will be required to conduct a subsequent source test no later than 36 months from the adoption date of the rule instead of 36 months from the date of the subject source test.~~

~~In lieu of conducting a source test for subsequent tests, the owner or operator may conduct an emission screening of hexavalent chromium, which is an emission test following a source test protocol that consistence of one run instead of three runs and is representative of operating conditions at the facility.~~

~~Additionally, facilities with a District-approved source test conducted after January 1, 2009 will be allowed to conduct an emission screening to satisfy the requirements of conducting the initial source test so long as the subject source test met the criteria stated above.~~

~~The emission screening of hexavalent chromium will show whether the air pollution control technique is operating and performing as intended. While parameter monitoring may evaluate the performance of capture periodically, the emission screening allows the verification of emission limits. Owners or operators may utilize this option as a method to reduce the costs for potential work hours lost or having a source testing company conduct multiple runs. Within 30 days of receiving the results of the emission screening, the owner or operator shall submit the results to SCAQMD. The owner or operator will be required to conduct a complete source test using an approved method within 60 days of conducting an emission screening that fails the capture efficiency test(s) specified in the source test protocol, exceeds an emission limit specified in the Permit to Operate, or exceeds an emission standard of the rule.~~

~~The owner or operator shall submit a source test protocol for source tests required under subdivision (k) as specified below in Table 1-4:~~

~~Table 1-4~~
~~Submittal Dates of Source Test Protocol~~

~~Permitted Air Pollution Control Technique~~	~~Facility Permitted Annual Ampere-Hours~~	~~Due Date of Initial Source Test Protocol~~	~~Due Date of Subsequent Source Test Protocol~~
~~Existing on or Before [Date of Adoption]~~	~~> 20,000,000~~	~~No later than [180 Days After Date of Rule Adoption]~~	~~180 Days Prior to Due Date of Subsequent Source Test~~
	~~≤ 20,000,000 and > 1,000,000~~	~~No later than [365 Days After Date of Rule Adoption]~~	~~180 Days Prior to Due Date of Subsequent Source Test~~
	~~≤ 1,000,000~~	~~No later than [545 Days After Date of Rule Adoption]~~	~~180 Days Prior to Due Date of Subsequent Source Test~~
~~New or Modified After [Date of Adoption]~~	~~Any~~	~~60 days After Initial Start-Up~~	~~180 Days Prior to Due Date of Subsequent Source Test~~

~~The submission of the source test protocol is separated into three categories based on the facility permitted ampere-hours. The most recent SCAQMD approved source test protocol may use for subsequent source tests if there are no changes in either the tanks controlled by the APCD or the APCD since the last successful SCAQMD approved source test.~~

Paragraph (k)(6) clarifies the requirements for demonstrating that each add-on pollution control device meets the design criteria and ventilation velocities specified in *A Manual of Recommended Practice for Design* authored by the American Conference of Governmental Industrial Hygienists or alternative design criteria and ventilation velocities approved by the Executive Officer.

~~PAR 1469 specifies that the owner or operator using an add-on air pollution control device or add-on non-ventilated air pollution device shall demonstrate that all emissions are captured by measuring collection slot velocity and the push air manifold pressure. The demonstration shall be made during any source test. Additional parameter monitoring shall take place at least once every 180 days. An adequate collection slot velocity is required to ensure that collection of hexavalent chromium emissions is at the level measured during the source test.~~

~~A deficient measurement would indicate that the hexavalent chromium emissions are not being collected and being controlled by the add-on air pollution control device. If the measurement of a collection slot velocity is measured in the "repairable measurement" of 90-95% of the most recent passing source or emission screening or less than 2,000 feet per minute (fpm) and greater than 1,800 fpm, the owner or operator shall repair or repair and re-measure within 3 calendar days of the measurement. The tank controlled by the add-on air pollution control device may continue to operate with the add-on air pollution control device in operation. If the owner or operator fails to demonstrate that the collection slot is in the "acceptable measurement" range, greater than 95% of the most recent source test or emission screening or greater than 2,000 fpm, the owner or operator~~

~~shall shut-down any tanks associated with the any add-on air pollution control devices associated with the collection slot. If the measurement of the collection slot velocity is measured to be in the "failing measurement" range, less than 90% of the most recent source test or emission screening or less than 1,800 fpm the owner or operator shall immediately shut-down any tanks associated with any air add-on air pollution control devices associated with the collection slot.~~

~~This prevents the owner or operator from operating a tank that may be emitting hexavalent chromium since the hexavalent chromium emissions are not being sufficiently collected. The owner or operator shall demonstrate that the collection slot is in the "acceptable measurement" by re-measuring the collection slot velocity under typical operating conditions of the tank, with the exception of the suspension of electrolytic operations, prior to resuming electrolytic operations. The periodic measurement requirements to demonstrate the capture efficiency are summarized in Table 1-5 below.~~

~~Table 1-5~~
~~Periodic Measurement to Demonstrate Capture Efficiency~~

	~~Collection Slot(s) Velocity~~	~~Push Air Manifold Pressure (for push-pull systems only)~~	~~Required Action~~
~~Acceptable Measurement~~	~~> 95% of the most recent source test or emission screening; or ≥ 2,000 fpm~~	~~95-105% compared to the most recent passing source test or emission screening~~	~~None~~
~~Repairable Measurement~~	~~90-95% of the most recent passing source test or emission screening test, or < 2,000 fpm and > 1,800 fpm~~	~~90-110% of the most recent passing source test or emission screening test~~	~~Repair or replace, and re-measure within 3 calendar days of measurement~~
~~Failing Measurement~~	~~< 90% of the most recent passing source test or emission screening test, or <1,800 fpm~~	~~> 110% or < 90% of the most recent passing source test or emission screening test~~	~~Immediately shut down all tanks controlled by the add-on air pollution control device~~

~~PAR 1469 clarifies the requirements of the smoke test to clarify that both add-on air pollution control devices and add-on non-ventilated air pollution control devices are to be tested. Add-on air pollution control devices have emission collection systems and the smoke tests demonstrates through a qualitative evaluation that emissions coming from the tank are being collected. Add-on non-ventilated air pollution control devices typically do not have an emissions collection system and a smoke test would demonstrate the containment of hexavalent chromium emissions by devices such as tank covers and merlin hoods.~~

Paragraph (k)(7) clarifies the methods that are required to be used for conducting a smoke test for add-on air pollution control devices (see Appendix 5 in PAR 1469) and add-on non-ventilated air pollution control devices (see Appendix 8 – Smoke Test to Demonstrate Capture Efficiency for an Add-on Air Pollution Control Device(s) Pursuant to Paragraph (k)(6) in PAR 1469).

Certification of Wetting Agent Chemical Fume Suppressant – Subdivision (l)

Paragraph (l)(1) modifies the existing requirements by prohibiting the addition of PFOS-based CFS to any chromium electroplating or chromic acid anodizing bath. Paragraph (l)(2) establishes the criteria for using a wetting agent chemical fume suppressant to lower the minimum surface tension of the tank to 40 dynes/cm, as measured by the stalagmometer, or below 33 dynes/cm, as measured by a tensiometer. This modification is made to be consistent with the federal NESHAP for Chromium Electroplating which bans the use of PFOS in chemical fume suppressants. The certification list will be updated periodically based on the certification process conducted by the SCAQMD and the California Air Resources Board (CARB). Paragraph (l)(3) establishes a requirement for the ~~O~~owner or operators to use a certified wetting agent chemical fume suppressant in accordance with the certification and the applicable manufacturer specifications.

Paragaph (l)(4) includes ~~PAR 1469 adds~~ a new requirement that no later than ~~July~~ January 1, 2020, the Executive Officer shall notify the owner or operator of the availability of a wetting agent chemical fume suppressant ~~CFS that meets the requirements by July 1, 2022~~ and the certification status of any potential wetting agent chemical fume suppressant~~CFS~~ going through the certification process conducted by SCAQMD and CARB.

Beginning July 1, ~~2022~~2021, the owners or operators of a facility shall only add a wetting agent chemical fume suppressant~~CFS~~ to a ~~Tier III Hexavalent C~~chromium electroplating or chromic acid anodizing ~~Containing~~ Tank that meets the requirement of (l)(~~1~~4) based on a certification process conducted by SCAQMD and CARB.

~~The previous certification process involved emission testing to determine a corresponding surface tension to consistently produce an emission rate of 0.01 mg/ampere-hour. The new certification process may consider: toxicity reviews of compounds in the CFS, emission testing for CFS emissions, surface tension, emission testing for hexavalent chromium emissions, and additional data to evaluate the CFS.~~

Paragraph (l)(5) specifies that if the notification indicates that a wetting agent chemical fume suppressant~~CFS~~ that meets the certification requirements will not be available by July 1, 2021, ~~then~~ the owner or operator of a facility shall ~~install and~~ only add a chemical fume suppressant to a chromium electroplating or a chromic acid anodizing tank based on the information in the notice ~~implement an air pollution control technique to meet the~~ specified in paragraph (l)(4)~~(2)~~ no later than July 1, 2021~~2022~~.

If the notice indicates that a chemical fume suppressant that meets the certification requirements will not be available by July 1, 2021, the owner or operator shall meet the emission limits specified in paragraph (h)(2) no later than July 1, 2021 or implement an alternative to a wetting agent chemical fume suppressant that meets the requirements in paragraphs (l)(7) and (l)(8). If an owner or operator of a facility elects to meet the requirements of paragraph (l)(5) by implementing an alternative to a wetting agent chemical fume suppressant the owner or operator would be required to submit a permit application for the chromium electroplating or chromic acid anodizing tank(s) that includes the alternative and any conditions specified in the approval of the alternative in paragraph (l)(8).

Also, an owner or operator of a facility may elect to meet the requirements of paragraph (l)(5) by phasing-out the use of hexavalent chromium in a chromium electroplating or chromic acid anodizing tank that uses a wetting agent chemical fume suppressant. If the owner or operator of a facility elects to phase out the use of hexavalent chromium the phase-out shall occur on or before July 1, 2022.

~~As discussed in Chapter 1, CFS may be used in conjunction with other air pollution control techniques. Assuming that no CFS are certified, it is anticipated that facilities will either be required to install additional add-on air pollution control devices, upgrade existing air pollution control techniques, or modify operating practices. Owners or operators will be required to modify or obtain a Permit to Operate that reflects the change and conduct any required emission testing.~~

Paragraph (l)(6) includes an option for the owner or operator of a facility to submit a written commitment to the Executive Officer no later than January 1, 2021 that states the facility shall phase-out the use of hexavalent chromium in the electroplating or chromic acid anodizing tank that is using a wetting agent chemical fume suppressant~~CFS~~ by July 1, ~~2023~~2022, in lieu of complying with paragraph (l)(5). This commitment shall be signed by the owner or operator of the facility. The owner or operator may continue to use a wetting agent chemical fume suppressant~~CFS~~ certified pursuant to paragraph (l)(1) until July 1, ~~2023~~2022.

Paragraph (l)(8) of PAR 1469 adds a new provision that in the event the Executive Officer notifies facilities by January 1, 2020 that no wetting agent chemical fume suppressants will be available by July 1, 2021, the Executive Officer may identify one or more alternatives to a wetting agent chemical fume suppressant that meet the 0.01 milligrams per ampere-hour (mg/ampere-hour) limit. During the previous rule development of Rule 1469, wetting agent chemical fume suppressants were identified as an effective and low cost air pollution control technique to reduce hexavalent chromium emissions for facilities permitted less than or equal to 50,000 ampere-hours per year. The alternative to a wetting agent chemical fume suppressant will identify air pollution control technique(s) that must be used in combination to meet an equivalent emission rate of 0.01 mg/ampere-hour.

Paragraph (l)(10) requires the owner or operator that fails to phase-out the use of hexavalent chromium by July 1, ~~2023~~2022 to cease operating the electroplating or chromic anodizing tank that contains hexavalent chromium until the facility can meet the specified emission limits. ~~While the tank may be in compliance with surface tension limits, a facility that fails to cease operating the tank will be in violation of this provision.~~

Parameter Monitoring – Subdivision (m)

Modifications to this subdivision are necessary to revise existing and add new parameter monitoring requirements for add-on air pollution control devices and add-on non-ventilated air pollution control devices.

In particular, subparagraph (m)(1)(A) clarifies the pressure and air flow requirements for monitoring the operation of an add-on air pollution control device. Specifics regarding installation, maintenance, and labeling are detailed in PAR 1469, Table 4 - Pressure and Air Flow Measurement Parameters. Similarly, the requirements for maintaining the mechanical gauges are detailed in PAR 1469, Appendix 4 - Summary and Inspection of Maintenance Requirements. As required in Table 4 of PAR 1469, the owner or operator using an add-on air pollution control device shall demonstrate that emissions are captured by measuring collection slot velocity and the push air manifold pressure. The demonstration shall be made during any source test. Beginning 60 days after the completion of the initial source test, the owner or operator shall conduct additional parameter monitoring at least once every 180 days. An adequate collection slot velocity is required to ensure the collection of hexavalent chromium emissions is at the level measured during the source test.

Subparagraph (m)(1)(B) establishes new requirements for the velocity of collection slots. In particular, Table 5 Add-on Air Pollution Control Device Parameter Monitoring, specifies the collection slot velocities and push air manifold pressure conditions that must be met for three categories: Acceptable Measurement, Repairable Measurement, and Failing Measurement.

Subparagraph (m)(1)(C) establishes new requirements for an owner or operator of a facility with an add-on air pollution control device demonstrating a repairable measurement to correct the measurement in a timely manner as specified in Table 5.

Subparagraph (m)(1)(D) establishes requirements for shutting down a tank controlled by an add-on air pollution control device until the collection slot velocity and/or push air manifold pressure are within the acceptable measurement range in the event there is a failure to correct a repairable measurement or if the measurement is in the "failing measurement" range.

Subparagraph (m)(1)(E) establishes requirements for conducting a smoke test once every 180 days in accordance with the methods described in Appendices 5 or 8 in PAR 1469, or some other method approved by the Executive Officer. The smoke test shall be conducted within 30 days of start-up for new and modified add-on air pollution control devices or add-on non-ventilated air pollution control devices.

Subparagraph (m)(1)(F) establishes requirements for when there is a failure of a smoke test. In the event an acceptable smoke test is not conducted in accordance with the requirements in subparagraph (m)(1)(E), the owner or operator of a facility shall immediately shutdown all Tier II and Tier III Hexavalent Chromium Tanks associated with the add-on air pollution control device or add-on non-ventilated air pollution control device until an acceptable smoke test is conducted.

~~Pressure Drops~~

~~PAR 1469 removes this subparagraph as the requirements have been moved to subparagraph (m)(1)(A).~~

~~Differential and Static Pressure~~

~~PAR 1469 requires additional monitoring of operational parameters. The owner or operator must continuously monitor the operation of the add-on air pollution control device by installing and maintaining mechanical gauges to ensure the applicable pressures and air flows are maintained at the push manifold, collection manifold, and across each stage of the control device. Each mechanical gauge shall be installed so that it is easily visible and in clear sight of the operation or maintenance personnel. The differential or static pressure shall be maintained within the value established during the source test and specified in the Permit to Operate. The gauges shall be labeled with the acceptable operating pressure and/or airflow ranges.~~

HEPA Filters –subparagraph (m)(1)(G)

Subparagraph (m)(1)(G) establishes parameter monitoring for HEPA filters. Beginning 60 days after the completion of the initial source test, ~~T~~the owner or operator of an add-on air pollution control device equipped with HEPA filters shall ensure that the monitoring device for pressure drop:

- Is equipped with ports to allow for periodic calibration in accordance with manufacturer's specifications;
- Is calibrated according to manufacturer's specification at least once every calendar year; and
- Is maintained in accordance with the manufacturer's specification.

Wetting Agent Chemical Fume Suppressants (Excluding Decorative Chromium Electroplating Tanks Using a Trivalent Chromium Bath) – paragraph (m)(2)

The original requirement in subparagraph (m) (2)(A) to measure surface tension weekly after 20 daily measurements ~~of surface tension~~ with no violation has been modified to occur every third operating day, but not less than once a week~~ly frequency~~ and relocated to subparagraph (m)(2)(B). The required non-PFOS chemical fume suppressant~~CFS~~ evaporate and degrade faster than the PFOS-containing products. SCAQMD staff is concerned that this faster degradation can result in faster increases to surface tensions values. More frequent periodic monitoring of tank bath surface tensions will ensure that an adequate amount of chemical fume suppressant~~CFS~~ are being used to comply with the surface tension limits specified in the rule and permit conditions. New s~~S~~ubparagraph (m)(2)(C) requires daily surface tension measurements to be conducted for 20 consecutive operating days if the surface tension as required by subparagraph (m)(2)(A) is not maintained. The owner or operator can resume monitoring every third operating after successfully measuring the surface tension daily for 20 consecutive operating days.

Fume Suppressants Forming a Foam Blanket – paragraph (m)(3)

When fume suppressants forming a foam blanket are used, paragraph (m)(3) requires thickness of the foam blanket across the surface of the chromium electroplating or chromic acid anodizing tank to be measured and maintained as established during the most recently approved source test to demonstrate compliance with the emission limit specified in paragraphs (h)(2) or (h)(4). In the event the foam blanket thickness is not maintained, subparagraph (m)(3)(C) requires hourly thickness measurements to be conducted for 15 consecutive operating days and then daily thickness measurements afterwards.

Polyballs or Similar Mechanical Fume Suppressants – paragraph (m)(4)

When polyballs or similar mechanical fume suppressants are used, paragraph (m)(4) requires a visual~~ly~~ inspection for coverage comparable to the coverage during the source test each operating day. The paragraph has been modified to specify ~~include~~ Tier II and Tier III Hexavalent Chromium~~-Containing~~ Tanks.

Inspection, Operation, and Maintenance Requirements~~& Operation and Maintenance Plan~~ – Subdivision (n)

Subdivision (n) establishes inspection, operation, and maintenance requirements for when add-on air pollution control devices or add-on non-ventilated air pollution control devices are in use. The original table previously identified as Table 4 has been moved to Appendix 4~~,~~ and renumbered as Table 4-1~~and incorporates the newly added parameter monitoring requirements of subdivision (l)~~. Tier II Hexavalent Chromium Tanks not controlled by an add-on air pollution control device shall comply with the applicable inspection and maintenance requirements in Appendix 4, Table 4-4. The existing requirements for facilities using CFS or mechanical fume suppressants has also been moved to Appendix 4, Table 4-~~2~~4. PAR 1469 also combines the existing requirements for the operation and maintenance plan into this subdivision.

Also, Tier II Hexavalent Chromium Tanks not controlled by an add-on air pollution control device and Tier I, Tier II, and Tier III Hexavalent Chromium Tanks are required to comply with new inspection and maintenance requirements within 90 days after the date of rule adoption.

Effective 90 days after the date of rule adoption, paragraphs (n)(3) and (n)(4) require the owner or operator of a facility to comply with the additional inspection and maintenance requirements in Appendix 4.

Also, effective 90 days after date of the rule adoption, paragraph (n)(9) requires the owner or operator to revise the facility's operation and maintenance plan to incorporate the inspection and maintenance requirements for a device or monitoring equipment that is identified in Tables 4-2 and 4-3 of Appendix 4.

Paragraph (n)(10) requires the owner or operator to photograph the ampere-hour reading of the ampere-hour being replaced and the new ampere-hour meter immediately after installation.

Recordkeeping and Reporting – Subdivisions (o) and (p)

Paragraph (o)(1) ~~PAR 1469~~ clarifies that the inspection records apply to facilities using either an add-on air pollution control devices or an add-on non-ventilated air pollution control devices. Additional recordkeeping requirements have been included to reflect the proposed provisions for building enclosures, housekeeping, best management practices, periodic source tests, capture efficiency tests, emission screening, and parameter monitoring. Inspection and maintenance requirements have been moved to Appendix 4.

As part of the ongoing compliance status and emission reports (specified in Appendix 3 – Content of Ongoing Compliance Status and Emission Reports), facilities must report the results of add-on air pollution ventilation measures conducted during the most recent source test. Facilities must report the velocity of each collection slot and push air manifold. Facilities must also report any pollution prevention measures that have been implemented that eliminate or reduce the use of hexavalent chromium in the chromium electroplating or chromic acid anodizing process. Also required in the compliance status reports are calculations for building enclosure envelopes, including locations and dimensions of openings counted towards the 3.5% allowance.

Paragraph (p)(4)~~PAR 1469~~ revises "Reports of Breakdowns" to "Notification of Incident". As background, SCAQMD Rule 430 provides breakdown coverage, where the facility may~~would~~ not be in violation of a permit condition or rule requirement, if the Executive Officer determines that it was a valid breakdown based on evidence provided by the owner or operator. However, the existing reference to Rule 430 in Rule 1469 is conflicting as Rule 430 does not apply to any Regulation XIV rules.

As a result, PAR 1469 replaces breakdown provisions with "Notification of Incident" which incorporates similar notification language used in Rule 430 by requiring the owner or operator to notify SCAQMD via 1-800-CUT-SMOG within ~~one~~four hours of the incident or within ~~one~~ four hour of the time the owner or ~~operator~~ operator was notified ~~knew or reasonably should have known~~ of the following:

- Any failed smoke test
- Any failed source test
- An exceedance of a permitted ampere-hour limit
- A malfunction of a non-resettable ampere-hour meter

A supplemental report is required to be submitted no later than 30 calendar days from the date of incident.

New and Modified Sources (removed)
PAR 1469 removes previous subdivision (l) relating to New and Modified Sources as facilities are required to submit a permit prior to altering or installing equipment under existing SCAQMD rules for permitting (Regulation II) and toxic new source review (Rule 1401).

Exemptions – Subdivision (r~~q~~)
Due to the new requirements for Tier I and Tier II Hexavalent Chromium~~-Containing~~ Tanks, PAR 1469 removes the exemption for process tanks associated with a chromium electroplating or chromic acid anodizing process in which neither chromium electroplating nor chromic acid anodizing is taking place. One of the objectives of PAR 1469 is to control emissions from tanks that were identified as sources of hexavalent chromium where neither electroplating nor chromic acid anodizing is taking place.

PAR 1469 also removes the exemption that would suspend requirements during periods of equipment breakdown. As discussed earlier, references to Rule 430 have been removed due to the lack of applicability to Regulations XIV.

PAR 1469 adds a new exemption from the requirements of paragraphs (f)(6), (g)(4), and (g)(5) provided that the buffing, grinding or polishing operations are conducted under a continuous flood of metal removal fluid.

Title V Permit Requirements (removed)
PAR 1469 removes ~~the~~ previous subdivision (o) as SCAQMD Rule 3002 already requires a facility to obtain a Title V permit and comply with the conditions. Therefore, this subdivision is unnecessary and duplicative.

Chromium Electroplating or Chromic Acid Anodizing Kits Requirements (removed)
PAR 1469 removes previous subdivision (q) which contained requirements for chromium electroplating or chromic acid anodizing kits as this existing language was originally from the state's Chrome Plating ATCM regarding prohibitions on chromium electroplating and chromic acid anodizing kits. This language has been removed because Rule 1469 facilities are still subject to those requirements under state law.

Conditional Requirements for Permanent Total Enclosure – Subdivision (t)

Paragraph (t)(1) requires the owner or operator of a facility to install a permanent total enclosure for a Tier III Hexavalent Chromium Tank with a that does not exceed 3.5% for all enclosure openings as specified in paragraph (e)(1) ~~if~~ for a Tier III Hexavalent Chromium Tank:

- That results in ~~M~~more than one non-passing source test as required in paragraph (k)(1) occurring~~ed~~ within a consecutive 48-month period; or
- Not immediately shut down pursuant to clause (m)(1)(C)(iii) or subparagraph (m)(1)(D) or subparagraph (m)(1)(F) and the facility is more than 1,000 feet from a sensitive receptor, and~~More than one failure of~~ the owner or operator failed to cease operating a~~n electroplating or anodizing line associated with~~ tank that is controlled by an add-on air pollution control device or add-on non-ventilated air pollution control device more than once within a consecutive 48-month period due to a failed measurement of the collection system~~ of an add-on air pollution control device~~, or a failed smoke test as required in paragraph (k)(6); or~~of an add-on air pollution control device or add-on non-ventilated air pollution control device within a consecutive 48-month period.~~
- Not immediately shut down pursuant to clause (m)(1)(C)(iii), subparagraph (m)(1)(D) or subparagraph (m)(1)(F) and the facility is 1,000 feet or less from a sensitive receptor, and the owner or operator failed to cease operating a tank controlled by an add-on air pollution control device or add-on non-ventilated air pollution control device.

The distance of a sensitive receptor or a school to the facility shall be measured from the property line of the sensitive receptor or school to the nearest property line of the facility.

Paragraph (t)(2) allows the owner or operator to contest the requirement in paragraph (t)(1) to install a permanent total enclosure within 30 days of receiving notification from the Executive Officer that the requirement had been triggered. A written report contesting the requirement shall include evidence that installation of the permanent total enclosure is not warranted based on the following criteria:

- The incidents of non-compliance did not occur; or
- The owner or operator resolved the specified incidents of non-compliance specified in paragraph (t)(1) in a timely manner; or
- The owner or operator implemented specific measures minimize the hexavalent chromium emissions.

The Executive Officer will use the information in the written report to determine whether the permanent total enclosure is required and will notify the owner or operator within 90 days of receiving the written report.

Paragraph (t)(4) requires ~~P~~permanent total enclosures ~~will be required~~ to vent to an add-on air pollution control device that is fitted with HEPA filters, or other filter media that is rated by the manufacturer to be equally or more effective, and designed in a manner that does not conflict with requirements or guidelines set forth by OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety.

Paragraph (t)(5) requires a ~~P~~permit application for a permanent total enclosure to be submitted to the Executive Officer as follows:

- No later than 180 days after notification by the Executive Officer if the property line of the facility is within 500 feet of the property line of any sensitive receptor~~, school, or early education center~~.
- No later than 270 days after notification by the Executive Officer for all other facilities.

Installation of the permanent total enclosure shall be completed no later than 12 months after the Permit to Construct is issued by the Executive Officer.

~~Under the proposed amended rule, the owner or operator would be allowed to contest the requirement to install a permanent total enclosure within 30 days of receiving notification from the Executive Officer that the requirement had been triggered. A written report contesting the requirement shall include evidence that installation of the permanent total enclosure is not warranted based on the following criteria:~~

- ~~The specified incidences of non-compliances did not occur; and~~
- ~~The owner or operator resolved the specified incidences of non-compliances in a timely manner; and~~
- ~~The owner or operator implemented specific measures minimize the hexavalent chromium emissions.~~

~~The Executive Officer will use the information in the written report to determine whether the permanent total enclosure is required and will notify the owner or operator within 90 days of receiving the written report.~~

Hexavalent Chromium Phase-Out Plan – Subdivision (u)

Paragraph (u)(1) provides ~~O~~owners and operators of any facility~~ies~~ with an existing Tier III Hexavalent Chromium ~~t~~Tank that plans to eliminate or reduce hexavalent chromium concentrations within the tank shall not be subject to the requirements of paragraph (h)(4) to vent the tank to an add-on air pollution control device. In order to qualify for this exemption, facilities must submit a plan to the Executive Officer for approval that includes:

- The method by which the hexavalent chromium concentration will be eliminated or reduced and expected completion date; and
- A list of milestones necessary to occur, including their projected dates; and
- A list of all control measures that will be implemented until the concentration is eliminated or reduced.

Paragraph (u)(2) requires the Hexavalent Chromium Phase-Out Plan to be subject to the fees specified in Rule 306 – Plan Fees.

Paragraph (u)(4) requires the owner or operator to submit a progress report to the Executive Officer by the first day of each calendar quarter indicating the performance to meet the increments of progress for the previous quarter or submit according to an alternative schedule as specified in the approved plan.

~~Facilities must also submit a progress report to the Executive Officer by the 5th of every month indicating the performance to meet the increments of progress for the previous month, or submit according to an alternative schedule as specified in the approved plan. Implementation of the plan must be completed within 2 years of approval of the Hexavalent Chromium Phase-Out Plan. In addition, facilities unable to eliminate or reduce emissions by the expected completion date or if a Phase-Out Plan is denied after it is resubmitted, the owner or operator must submit permit applications for add-on air pollution control devices within 30 days of when they knew, or should have known that they could not meet the date. The add-on air pollution control device must be installed no later than 180 days after a Permit to Construct is issued.~~

Paragraph (u)(5) requires owners or operators to submit complete SCAQMD permit applications to comply with subdivision (h) if:

- The owner or operator does not eliminate or reduce hexavalent chromium by the final completion date in the Hexavalent Chromium Phase-Out Plan;
- The Executive Officer denies a resubmitted Hexavalent Chromium Phase-Out Plan; or
- The owner or operator fails to resubmit the Hexavalent Chromium Phase-Out Plan.

Paragraph (u)(6) requires the owner or operator to install the add-on air pollution control device no later than 180 days after a Permit to Construct is issued.

Time Extensions – Subdivision (v)

Paragraph (v)(1) allows an owner or operator of a facility to submit a request to the Executive Officer for a one-time extension for up to 12 months to:

- Complete installation of an add-on air pollution control device, implement an approved alternative compliance method, or implement an approved Hexavalent Chromium Phase-Out Plan to meet the requirements under subparagraph (h)(4)(C); or
- Meet the hexavalent chromium emission limit, phase-out the use of hexavalent chromium, or implement an alternative to a wetting agent chemical fume suppressant required under paragraph (l)(5).

Paragraph (v)(2) requires an owner or operator of a facility that requests a time extension under paragraph (v)(1) to submit the request no later than 90 days before the compliance deadline specified in subparagraph (h)(4)(C) or paragraph (l)(5) and provide:

- The facility name, SCAQMD facility identification number, and the name and phone number of a contact person;
- A description of the chromium electroplating or chromic acid anodizing tank and the SCAQMD Permit to Operate and tank number;
- A description of the emission reduction approach that is being implemented;
- The specific provision under subparagraph (h)(4)(C) or paragraph (l)(5) for which a compliance extension is being requested;
- The reason(s) a time extension is needed;

- Progress in meeting the provisions in subparagraph (h)(4)(C) or paragraph (l)(5) including but not limited to date permit application was submitted to the SCAQMD, date permit to construct was approved, purchase order of equipment, date of service of contractors or consultants to install equipment; and
- The length of time requested, up to 12 months.

Paragraph (v)(3) sets-forth criteria for the Executive Officer to review and approve the time extension requested by an owner or operator. Specifically, the owner or operator would be required to demonstrate that there are specific circumstances beyond the control of the owner or operator that necessitate additional time to meet the compliance dates specified under subparagraph (h)(4)(C) and paragraph (l)(5). Further, the demonstration would be required to be substantiated with information that includes, but is not limited to detailed schedules, engineering designs, construction plans, permit applications, purchase orders, economic burden, and technical infeasibility.

Appendices

All additions and amendments to the following appendices have been made in order to provide clarity and information on PAR 1469.

Appendix 1 – Content of Source Test Reports (revised)

- Items 9-11 have been added to require applicable industrial ventilation limits; collection slot velocities (if applicable); and measured static, differential, or volumetric flow rate at the push manifold; across each stage of the control device; and exhaust stack (if applicable).

Appendix 4 – Notification of Construction Reports (deleted)

- Removed because information required for future construction of equipment at new or existing facilities is submitted with a Permit to Construction.

Appendix 4 – Summary of Inspection Requirements (new)

- Table 4-1: Summary of Inspection and Maintenance Requirements for Sources Using Add-on Air Pollution Control Device(s) or Add-On Non-Ventilated Air Pollution Control Device(s) previously in Table 4 has been added.
- Table 4-2: Additional Inspection and Maintenance Requirements for Tier I, II, and III Hexavalent Chromium Tank(s) has been added.
- Table 4-3: Summary of Inspection and Maintenance Requirements for Sources Not Using Add-on Air Pollution Control Device to Control Tier II Hexavalent Chromium Tank(s) has been added.
- Table 4-4: Summary of Inspection and Maintenance Requirements for Sources Using Chemical or Mechanical Fume Suppressants previously in Table 5 has been added.

Appendix 5 – Smoke Test for Add-on Non-Ventilated Air Pollution Control Device (revised)

Appendix 7 – Distance Adjusted Ampere-Hour and Annual Emissions Limits for Facilities Located More Than 25 Meters from a Residence or Sensitive Receptor (deleted)

- This appendix was deleted because the tables originally included in this appendix were applicable to requirements in Rule 1469 that were removed.

Appendix 7 – Information Demonstrating an Alternative Method(s) of Compliance Pursuant to Subdivision (i) (revised)

- Item 5 has been added to require an owner or operator to demonstrate that the facility is at least 75 feet from a sensitive receptor. Facilities that are within 75 feet from sensitive receptors are ineligible to utilize an alternative method and are required to use an add-on air pollution control device.

Appendix 8 – Smoke Test to Demonstrate Capture Efficiency for an Add-on Air Pollution Control Device(s) Pursuant to Paragraph (k)(6) (revised)

- The reference to "Model #15 049 Tel-Tru T-T Smoke Sticks from E. Vernon Hill Incorporated" was removed from Item 2.1.

Appendix 10 – Tier II and Tier III Hexavalent Chromium Tank Thresholds (new)

- Item 4 has been added, which includes a provision for small tanks with a surface area less than four square feet that have a hexavalent chromium concentration less than 10,000 ppm with a temperature less than 200 degrees Fahrenheit. Staff calculated the emissions from these tanks and if the operator is operating the tank between 170 and 200 degrees Fahrenheit for four hours per week or less, hexavalent chromium emissions from these tanks would be less than tanks controlled to 0.2 mg/hour. Although no add-on pollution controls would be required for these small tanks, the operator must cover the tank when not actively moving parts in or out of the tank and would need to maintain a data logger pursuant to paragraph (n)(3), to log the time and temperature of tank to demonstrate the temperature of the tank is between 170 and 200 degrees Fahrenheit for no more than 4 hours per week.

CHAPTER 2

ENVIRONMENTAL CHECKLIST

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's potential adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

GENERAL INFORMATION

Project Title:	Proposed Amended Rule (PAR) 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	Mr. Sam Wang, (909) 396-2649
	Mr. Darren Ha, (909) 396-2548
PAR 1469 Contact Person	Mr. Neil Fujiwara, (909) 396-3512
Project Sponsor's Name:	South Coast Air Quality Management District
Project Sponsor's Address:	21865 Copley Drive Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	PAR 1469 is to further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations. PAR 1469 contains new requirements for: 1) hexavalent chromium~~-containing~~ tanks, such as dichromate seal tanks, that are currently not regulated; 2) air pollution control equipment to be installed on hexavalent chromium~~-containing~~ Tier III tanks that emit or have the potential to emit hexavalent chromium; 3) conducting periodic source testing and parametric monitoring of air pollution control equipment; 4) complying with building enclosure provisions;~~ 5) maintaining minimum freeboard height on certain tanks~~; 5~~6~~) conducting additional housekeeping and implementing best management practices for all hexavalent chromium ~~containing~~ tanks; 6~~7~~) permanent total enclosures to be vented to air pollution control equipment in the event of non-compliance with specific source testing or monitoring requirements; 7~~8~~) reducing allowable surface tension limits; 8~~9~~) prohibiting the use of chemical fume suppressants that contain perfluorooctane sulfonic acid (PFOS); and 9~~10~~) evaluating the use of non-PFOS chemical fume suppressants with toxicity concerns via a revised

	certification process conducted by SCAQMD and the California Air Resources Board. Some facilities that may be affected by PAR 1469 are identified on lists compiled by the California Department of Toxic Substances Control per Government Code Section 65962.5. While the reduction of hexavalent chromium emissions is expected to create an environmental benefit, activities that facility operators may undertake to comply with PAR 1469 may also create secondary adverse environmental impacts from the construction and operation activities primarily associated with installing new or modifying existing air pollution control equipment. However, analysis of PAR 1469 in the Revised Final~~Draft~~ EA did not result in the identification of any environmental topic areas that would be significantly adversely affected.
Surrounding Land Uses and Setting:	Various
Other Public Agencies Whose Approval is Required:	Not applicable

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓"involve at least one impact that is a "Potentially Significant Impact". An explanation relative to the determination of impacts can be found following the checklist for each area.

☐	Aesthetics	☐	Geology and Soils	☐	Population and Housing
☐	Agriculture and Forestry Resources	☐	Hazards and Hazardous Materials	☐	Public Services
☐	Air Quality and Greenhouse Gas Emissions	☐	Hydrology and Water Quality	☐	Recreation
☐	Biological Resources	☐	Land Use and Planning	☐	Solid and Hazardous Waste
☐	Cultural Resources	☐	Mineral Resources	☐	Transportation and Traffic
☐	Energy	☐	Noise	☐	Mandatory Findings of Significance

DETERMINATION

On the basis of this initial evaluation:

- ☑ I find the proposed project, in accordance with those findings made pursuant to CEQA Guidelines Section 15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts has been prepared.

- ☐ I find that although the proposed project could have a significant effect on the environment, there will NOT be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. An ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.

- ☐ I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL ASSESSMENT will be prepared.

- ☐ I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect: 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards; and, 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.

- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects: 1) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards; and, 2) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: February 15, 2018 **Signature:**

Barbara Radlein
Program Supervisor, CEQA Special Projects
Planning, Rules, and Area Sources

ENVIRONMENTAL CHECKLIST AND DISCUSSION

As discussed in Chapter 1, the main focus of PAR 1469 is to further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations. PAR 1469 has been evaluated relative to each of the 17 environmental topics identified in the following environmental checklist. Many requirements in PAR 1469 would not be expected to cause any physical changes that that could have secondary adverse environmental effects. For example, requirements to keep records, submit source testing protocols, and provide notifications are administrative or procedural in nature and would not be expected to create any secondary adverse environmental effects. In addition, more stringent requirement of the best management practices is not expected to cause environmental impacts because facilities currently are implementing most of the best management practices and the additional best management practices do not require any major construction for the facilities.

PAR 1469 also contains requirements that may cause physical activities to occur at sites affected by the proposed project and these activities may create secondary adverse environmental impacts. For example, in order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing new add-on air pollution control devices (APCDs) to control hexavalent chromium emissions from Tier III tanks, relocating hexavalent chromium~~-containing~~ tanks into buildings, installing building enclosures, conducting additional source tests, and the implementation of additional housekeeping and best management practices for all hexavalent chromium~~-containing~~ tanks. Activities associated with tank relocations, constructing~~installing~~ building enclosures~~-constructions~~, and installing APCDs are treated as construction impacts while conducting source tests and implementing housekeeping are considered operational impacts. Thus, the analysis in this Revised Final~~Draft~~ EA focuses on the potential secondary adverse environmental impacts associated with these activities. To evaluate these impacts, the following assumptions were relied upon in the analyses for the 115 facilities in SCAQMD's jurisdiction that are subject to PAR 1469:

Construction:

- 55 ~~61~~facilities have ~~118~~ 103 Tier III tanks that would be required to have ~~118~~ 103 APCDs installed within 36 months after the date of adoption of PAR 1469.

- Each APCD consists of ductwork, one blower, one mist eliminator and one HEPA filter system.

- An additional 27 APCDs are assumed to be installed at 27 decorative chrome electroplating, hard chrome electroplating or chromic acid anodizing facilities that use CFS without a HEPA or equivalent APCD in the event that no chemical fume suppressants will be certified prior to July 1, 2022. The owners/operators of these affected facilities will need to plan for and install the APCDs prior to this date. The construction schedule for installing these APCDs is estimated to occur over a 10-month period from ~~5/1/2021 – 7/1/2021~~ October 2020 to July 2021.

- For each tank required to be controlled under PAR 1469, one APCD is assumed to be installed. This is a conservative assumption that overestimates the actual number of APCDs that may be installed and resulting impacts from construction and operation, for the following reasons:

- o Equipment associated with multiple APCDs being delivered to one facility can be shipped on the same truck;

- o Some facilities may be able to vent emissions from multiple tanks to -one APCD, depending on the proximity of the tanks relative to the location of the APCD;

- o Some facilities may be able to either vent a Tier III tank to an existing APCD, provided there is enough capacity to handle the extra flow, or upgrade an existing APCD to accommodate any additional tanks.

- o Facilities that conduct chromic acid anodizing may have some tanks that would be considered Tier III tanks depending on the concentration of hexavalent chromium in the tanks and if air sparging is used as the agitation method. However, industry representatives indicated that these tanks would be converted to use mechanical agitation, such as eductors. By modifying the agitation method, the tanks would not be considered a Tier III tank and therefore not require APCDs to be installed.

- Up to 6 stripping tanks may need to undergo minor construction activities because the tanks are currently located outside of a building. In order to comply with the building enclosure requirements prescribed in subdivision (e) of PAR 1469, these tanks will need to be relocated inside a building. The tank relocation is expected to occur within 90 days after the date of adoption of PAR 1469.

- Some facilities may need to modify the buildings in which the tanks are operating in order to comply with the maximum three and a half percent (3.5%) building opening of the building envelope enclosure requirement in subdivision (e). Based on observations from site visits and survey results, the building improvements that may be necessary are expected to be minor. Modifications to those buildings to meet the requirements of PAR 1469 include closing doors, windows, and other openings or installing a roll-up door or plastic strip curtains. These activities can be accomplished with one to several employees in a short period of time (from one to three days) using hand tools and onsite materials. PAR 1469 does not require that all openings to be closed, only specific openings and allows openings that represent up to 3.5% ~~three and a half percent~~ of the building envelope. Therefore, the environmental impacts associated with the building improvement activities that may be employed to comply with the 3.5% ~~three and a half percent~~ building enclosure requirement are considered to be negligible and are not evaluated further.

- For the "worst-case" peak construction day, the analysis in the Draft EA assumed that 12 APCDs ~~are assumed to~~ would be constructed on a given day. SCAQMD staff used the total numbers of APCD divided by 12 months which was ~~is~~ a very conservative assumption and approach at that time. To adjust the analysis to reflect the revisions to PAR 1469 that occurred after the release of the Draft EA for public review and comment, ~~The construction for~~ two additional permanent total enclosures (PTEs) would also need to be constructed on a peak construction day. For the purpose of this analysis, the construction of two PTEs is ~~are~~ equivalent to the construction of two APCDs.~~,~~ T~~t~~hus, the analysis has been revised to ~~conservative approach is to~~ assume that 14 APCDs would ~~to~~ be constructed on a peak day.

- The installation of one APCD will require one air compressor, one welder, one forklift, and one aerial lift to operate four hours per day for five days and will require a construction crew consisting of six members (1 vendor driving a medium duty delivery truck (MDT) and 5 workers driving light duty vehicles (LDA/LDT1/LDT2)).

- The relocation of one tank will require one forklift and one welder to operate four hours per day for one day. The analysis assumes that only one construction crew (the welder who is not a facility employee) will drive one LDA/LDT1/LDT2 vehicle to do the welding work. All other work can be done by facility employees.

- CalEEMod version 2016.3.2 will be used to analyze the emissions from vehicle trips during construction.

- Tier II Hexavalent Chromium Tanks have the potential to emit hexavalent chromium emissions at a rate between 0.20 mg/hr to 0.40 mg/hr and controls such as mechanical fume suppressants or tank covers can be utilized to reduce hexavalent chromium emissions to below 0.20 mg/hr. For this reason, no construction activities are assumed for Tier II Hexavalent Chromium Tanks to comply with PAR 1469.

Operation:

- Up to 89 ~~98~~ facilities will need to comply with either the full or screening source testing requirements described in subdivision (k) of PAR 1469 for the Tier III tanks. Owners/operators of affected facilities would be expected to hire a source testing company to do the work. This analysis assumes that one source testing vehicle (LDT) with a 2-person crew and one maintenance truck (MDV) with a 2-person crew will each drive approximately 40 miles round trip each day to conduct the required source tests or emission screening tests at each facility.

- For the "worst-case" peak operation day, up to four source testing vehicles and four maintenance trucks will be conducting source tests or emissions screening tests on the same day.

- Any facility that exceeds the emission~~source test~~ limits in PAR 1469 after a non-passing source test ~~re-testing~~ will be subject to requirements to install a permanent total enclosure with negative air pressure vented to pollution controls. The installation of the permanent total enclosure and negative air will have associated vehicle trips and equipment to complete the installation and these activities are considered as construction impacts. Implementing a negative air control system will have associated electricity use. The electricity use is ~~are~~ considered an~~as~~ operational impact~~s~~.

- No additional employees are expected to be hired as a result of PAR 1469.

Subsequent to the release of the Draft EA for public review and comment, modifications were made to PAR 1469 that are described in the Project Description section in Chapter 1 and these changes are also reflected in the above assumptions. Staff has reviewed these modifications and concluded that overall, no new impacts to any environmental topic area are anticipated to result from these modifications. Further, the impacts previously evaluated in the Draft EA would not be made substantially worse and the conclusions reached in the Draft EA remain unchanged in both the Final EA and the Revised Final EA with respect to the latest version of PAR 1469. Thus, staff has concluded that none of the modifications constitute significant new information of substantial importance relative to the Draft EA. In addition, revisions to PAR 1469 in response to verbal or written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the document pursuant to CEQA Guidelines Sections 15073.5 and 15088.5.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
I.	**AESTHETICS.** Would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☑
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☑

Significance Criteria

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

I. a), b) c) & d) No Impact. To reduce hexavalent chromium emissions from the affected facilities, new APCDs (e.g., HEPA filters) will need to be installed or in some instances, older or less efficient APCDs may need to be replaced with newer, cleaner, more efficient APCDs. In addition, in order to comply with the building enclosure requirements in PAR 1469, some facilities may need to relocate their tanks from outside of the building to inside.

Due to the size and weight of the APCD that may need to be replaced or installed and the tanks that may need to be relocated, construction equipment such as aerial lifts, compressors, welders, and forklifts, et cetera, will be needed to carry out these activities. Chromium electroplating and chromic acid anodizing facilities work with all sizes of products so it is not uncommon for these facilities to already have aerial lifts, forklifts and other types of heavy equipment on site as part of their day-to-day operations. An aerial lift, when fully extended may be temporarily visible in the surrounding areas while in use if the construction work is primarily occurring outside of existing buildings or structures. However, the visibility of an aerial lift to surrounding areas will also depend on where the equipment is located within each facility's property boundary. Except for the use of aerial lift, the majority of the construction equipment is expected to be low in height and not substantially visible to the surrounding area due to existing fencing along the property lines and existing structures currently within the facilities that may buffer the views of the construction activities.

Because each affected facility is located in existing industrial, commercial or mixed land use areas, the construction equipment is not expected to be substantially discernable from what exists on-site for routine operations and maintenance activities. Further, the construction activities are not expected to adversely impact views and aesthetics resources since most of the heavy equipment and activities are expected to occur within the confines of each existing enclosed facility and are expected to introduce only minor visual changes to areas outside each facility, if at all, depending on the location of the construction activities within the facility.

Lastly, the construction activities are expected to be temporary in nature and will cease following completion of the installation of new or modifications to existing APCDs or relocation of tanks. Once construction of any new or modified APCDs and tank relocations are completed, any construction equipment that has been rented will be removed from each facility. Further, these new or modified APCDs would be expected to blend in with the existing industrial profile at the affected facilities because the heights of these units are typically smaller when compared to neighboring existing equipment onsite and their associated stack heights would be about the same or shorter than existing stacks within the affected facilities.

PAR 1469 also contains requirements for facility owners or operators to conduct periodic source testing and parametric monitoring of APCDs, and to conduct additional housekeeping and implement best management practices for all hexavalent chromium ~~containing~~ tanks. These low-profile activities are limited to occur within each facility's property such that scenic vistas would not be affected.

Therefore, any potential construction and operation of new and modified existing APCDs and tanks as a result of the proposed project would not be expected to damage, degrade, or obstruct scenic resources and the existing visual character of any site in the vicinity of affected facilities.

There are no components in PAR 1469 that would require construction activities to occur at night. Further, cities often have their own limitations and prohibitions that restrict construction from occurring during evening hours and weekends. Therefore, no additional temporary construction lighting at the facility would be expected. Similarly, while the proposed project has no provisions that would require affected equipment to operate at night, some facilities currently operate multiple shifts and existing lighting is utilized during the nighttime shifts. For those facilities that are projected to modify existing buildings or install APCDs, once construction is complete, additional permanent light fixtures may be installed on or near the new or modified structures for safety and security reasons. These permanent light fixtures should be positioned to direct light downward toward equipment within the facility so as to not create additional light or glare offsite to residences or sensitive receptors. Therefore, the proposed project is not expected to create a new source of substantial light or glare at any of the affected facilities in a manner that would adversely affect day or nighttime views in the surrounding areas.

Conclusion

Based upon these considerations, significant adverse aesthetics impacts are not expected from implementing PAR 1469. Since no significant aesthetics impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?	☐	☐	☐	☑
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☑
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑

Significance Criteria

Project-related impacts on agriculture and forestry resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project conflicts with existing zoning for, or causes rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined in Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).
- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

II. a), b), c), & d) No Impact. Compliance with PAR 1469 is expected to be met by installing or replacing APCDs, relocating tanks, installing building enclosures, and conducting additional source tests and parametric monitoring of APCDs. Since both construction and operation activities resulting from the ~~that would occur as a result~~ of implementation~~ing~~ of the proposed project would occur within the existing boundaries of each affected facility, there are no provisions in PAR 1469 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements affecting ~~relative to~~ agricultural resources would be altered by the proposed project. For these reasons, implementation of PAR 1469 would not convert farmland to non-agricultural use or conflict with zoning for agriculture use or a Williamson Act contract. Furthermore, it is not expected that PAR 1469 would conflict with existing zoning for, or cause rezoning of, forest land; or result in the loss of forest land or conversion of forest land to non-forest use. Consequently, the proposed project would not create any significant adverse agriculture or forestry impacts.

Conclusion

Based upon these considerations, significant adverse agriculture and forestry resources impacts are not expected from implementing PAR 1469. Since no significant agriculture and forestry resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
III. AIR QUALITY AND GREENHOUSE GAS EMISSIONS. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☑
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☐	☑	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☑	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☑	☐
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	☐	☐	☑	☐
g) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
h) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

Significance Criteria

To determine whether or not air quality and greenhouse gas impacts from implementing PAR 1469 are significant, impacts will be evaluated and compared to the criteria in Table 2-1. PAR 1469 will be considered to have significant adverse impacts if any one of the thresholds in Table 2-1 are equaled or exceeded.

Table 2-1
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds [a]		
Pollutant	**Construction** [b]	**Operation** [c]
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day

Toxic Air Contaminants (TACs), Odor, and GHG Thresholds	
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402
GHG	10,000 MT/yr CO_2eq for industrial facilities

Ambient Air Quality Standards for Criteria Pollutants [d]	
NO_2 1-hour average annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)
PM_{10} 24-hour average annual average	$10.4\ \mu g/m^3$ (construction)[e] & $2.5\ \mu g/m^3$ (operation) $1.0\ \mu g/m^3$
$PM_{2.5}$ 24-hour average	$10.4\ \mu g/m^3$ (construction)[e] & $2.5\ \mu g/m^3$ (operation)
SO_2 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)
Sulfate 24-hour average	$25\ \mu g/m^3$ (state)
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)
Lead 30-day Average Rolling 3-month average	$1.5\ \mu g/m^3$ (state) $0.15\ \mu g/m^3$ (federal)

[a] Source: SCAQMD CEQA Handbook (SCAQMD, 1993)
[b] Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).
[c] For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.
[d] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
[e] Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day; ppm = parts per million; $\mu g/m^3$ = microgram per cubic meter; ≥ = greater than or equal to; MT/yr CO_2eq = metric tons per year of CO_2 equivalents; > = greater than

Revision: March 2015

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

III. a) No Impact. The SCAQMD is required by law to prepare a comprehensive district-wide Air Quality Management Plan (AQMP) which includes strategies (e.g., control measures) to reduce emission levels to achieve and maintain state and federal ambient air quality standards, and to ensure that new sources of emissions are planned and operated to be consistent with the SCAQMD's air quality goals. The AQMP's air pollution reduction strategies include control measures which target stationary, area, mobile and indirect sources. These control measures are based on feasible methods of attaining ambient air quality standards. Pursuant to the provisions of both the state and federal Clean Air Acts, the SCAQMD is also required to attain the state and federal ambient air quality standards for all criteria pollutants.

The most recent regional blueprint for how the SCAQMD will achieve air quality standards and healthful air is outlined in the 2016 AQMP[9] which contains multiple goals of promoting reductions of criteria air pollutants, greenhouse gases, and toxics. In particular, the 2016 AQMP contains control measure TXM-02: Control of Toxic Metal Particulate Emissions from Plating and Anodizing Operations, which identifies Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid and Anodizing Operations, to specifically address reducing fugitive particulate matter (PM) emissions and hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations.

PAR 1469 has been crafted to further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations and will result in the installation of APCDs, tank relocations, ~~adding~~ and improving building enclosures or buildings.~~ requirements.~~ PAR 1469 will also require additional source tests and parametric monitoring of APCDs, additional housekeeping, and implementation of best management practices. Upon implementation, PAR 1469 would be expected to reduce exposure to hexavalent chromium emissions of ~~affecting~~ neighboring businesses and residents.

For these reasons, PAR 1469 is not expected to obstruct or conflict with the implementation of the 2016 AQMP.~~ because t~~The emission reductions from implementing PAR 1469 are in accordance

9 SCAQMD, Final 2016 Air Quality Management Plan, March, 2017. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf

with the emission reduction goals in the 2016 AQMP. PAR 1469 will help reduce toxic and fugitive PM emissions which are consistent with the goals of the 2016 AQMP. Therefore, implementing PAR 1469 to reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations would not conflict with or obstruct implementation of the applicable air quality plan. Since no significant impacts were identified for this issue, no mitigation measures are necessary or required.

III. b) and f) Less Than Significant Impact. The determination of whether a project will conflict with or obstruct implementation of the SCAQMD's 2016 AQMP and/or diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutants is dependent on construction and operational activities associated with the proposed project. While PAR 1469 does not contain any requirements for facilities to build new chromium electroplating and chromic acid anodizing operations, some requirements in PAR 1469 may be expected to cause existing facilities to make physical modifications that may require some construction activities as well as operational changes, once construction is completed.

It is important to note that SCAQMD staff is not aware of any new chromium electroplating and chromic acid anodizing operations facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if any, would be built in the long-term. Therefore, in accordance with CEQA Guidelines Section 15145, an evaluation of construction and operation impacts for new facilities is concluded to be speculative and will not be evaluated further in this analysis.

Instead, the focus of the analysis will be on the 115 existing facilities and the effects of complying with PAR 1469 (e.g, physical modifications requiring construction or operational changes) as explained in the following discussion.

Construction Activities

The primary source of air quality construction impacts would be from PAR 1469's key requirements to install new APCDs and associated ventilation systems as needed, remove the old existing APCDs (if any) and replace with the new ones, relocate tanks currently operating outside of the buildings by moving them inside, and construct building enclosures.

Operational Activities

Similarly, the primary source of air quality impacts during operation would be from the requirements to maintain the APCDs and conduct additional source tests of the APCDs. Thus, the analysis focuses on the potential secondary adverse environmental impacts from these activities during operation. Other operational activities including conducting parametric monitoring of APCDs, implementing additional housekeeping and best management practices, maintaining minimum freeboard height on certain tanks and reducing allowable surface tension limits are all ~~procedural support~~ activities to help achieve beneficial reductions in hexavalent chromium emissions without creating any adverse air quality impacts.

Table 2-2 summarizes the key requirements in PAR 1469 that may create secondary adverse air quality and greenhouse gas (GHG) impacts during construction and operation.

Table 2-2
Sources of Potential Secondary Adverse Air Quality and GHG Impacts During Construction and Operation

Key Requirements in PAR 1469	**Physical Actions Anticipated During:**	
	Construction	**Operation**
Subdivision (d): Tanks currently operating outside of the buildings	Relocate tanks	None
Subdivision (e): Building enclosures	1. Close ~~the~~ doors, windows, and other openings 2. Install roll-up doors or plastic strip curtains	None
Subdivisions (f) & (g): Housekeeping and best management practices	None	Already in practice; minimal additional actions
Subdivision (h): Add-on air pollution control devices, parameter monitoring, and emission standards	Replace and/or install APCDs	1. Air pollution control equipment (e.g., HEPA) operation 2. Vehicle trips due to filter replacement, waste disposal, and filter leak detection
Subdivision (k): Source test	None	Vehicle trips due to additional periodic source testing
Subdivision (t): Installation of Permanent Total Enclosures (PTE)	Construction and Installation of PTEs for Tier III tanks	None

For the purpose of the conducting a worst-case CEQA analysis, for the 115 chromium electroplating and chromic acid anodizing operations facilities that will be subject to PAR 1469, the following assumptions have been made:

- 55 ~~61~~ facilities have 103 ~~118~~ Tier III tanks that would be required to have 103 ~~118~~ APCDs installed within 36 months after the date of adoption of PAR 1469. Each APCD consists of ductwork, one blower, one mist eliminator and one HEPA filter system. Table 2-3 summarizes the APCD installation schedule based on the type of facilities subject to the requirements in PAR 1469.

Table 2-3
Estimated APCD Installation Schedule

Type of facilities	Estimated number of APCDs to be installed at the time of Draft EA	Estimated number of APCDs to be installed at the time of Final EA*	Estimated construction schedule at the time Draft EA	Estimated construction schedule at the time of Final EA*
Chromic Acid Anodizing	63	71	4/1/2019 – 4/1/2020	9/2019 – 9/2020
Hard Plating	21	21	10/1/2019 – 10/1/2020	3/2020 – 3/2021
Decorative Plating	34	11	4/1/2020 – 4/1/2021	9/2020 – 9/2021

* At the time of both the Final EA and Revised Final EA.

- An additional 27 APCDs are assumed to be installed at 27 decorative chrome electroplating, hard chrome electroplating or chromic acid anodizing facilities that use CFS without a HEPA or equivalent APCD in the event that no CFS will be certified prior to July 1, 2022. The owners/operators of these affected facilities will need to plan for and install the APCDs prior to this date. The construction schedule for installing these APCDs is estimated to occur from ~~5/1/2021~~10/2020 – ~~7/1/2021~~7/2021;

- For each tank required to be controlled under PAR 1469, one APCD is assumed to be installed. This is a conservative assumption that overestimates actual number of APCDs that may be installed and resulting impacts from construction and operation, for the following reasons:

  - Equipment associated with multiple APCDs being delivered to one facility can be shipped on the same truck;

  - Some facilities may be able to vent emissions from multiple tanks to one APCD, depending on proximity of the tanks relative to the location of the APCD;

  - Some facilities may be able to either vent a Tier III tank to an existing APCD, provided there is enough capacity to handle the extra flow, or upgrade an existing APCD to accommodate any additional tanks.

  - Facilities that conduct chromic acid anodizing may have some tanks that would be considered Tier III tanks depending on the concentration of hexavalent chromium in the tanks and if air sparging is used as the agitation method. However, industry representatives indicated that these tanks would be converted to use mechanical agitation, such as eductors. By modifying the agitation method, the tanks would not be considered a Tier III tank and therefore not require APCDs to be installed.

- Up to 6 stripping tanks may need to undergo minor construction activities because the tanks are currently located outside of a building. In order to comply with the building enclosure requirements prescribed in subdivision (e) of PAR 1469, these tanks will need to be relocated inside a building. The tank relocation is expected to occur within 90 days after the date of adoption of PAR 1469.

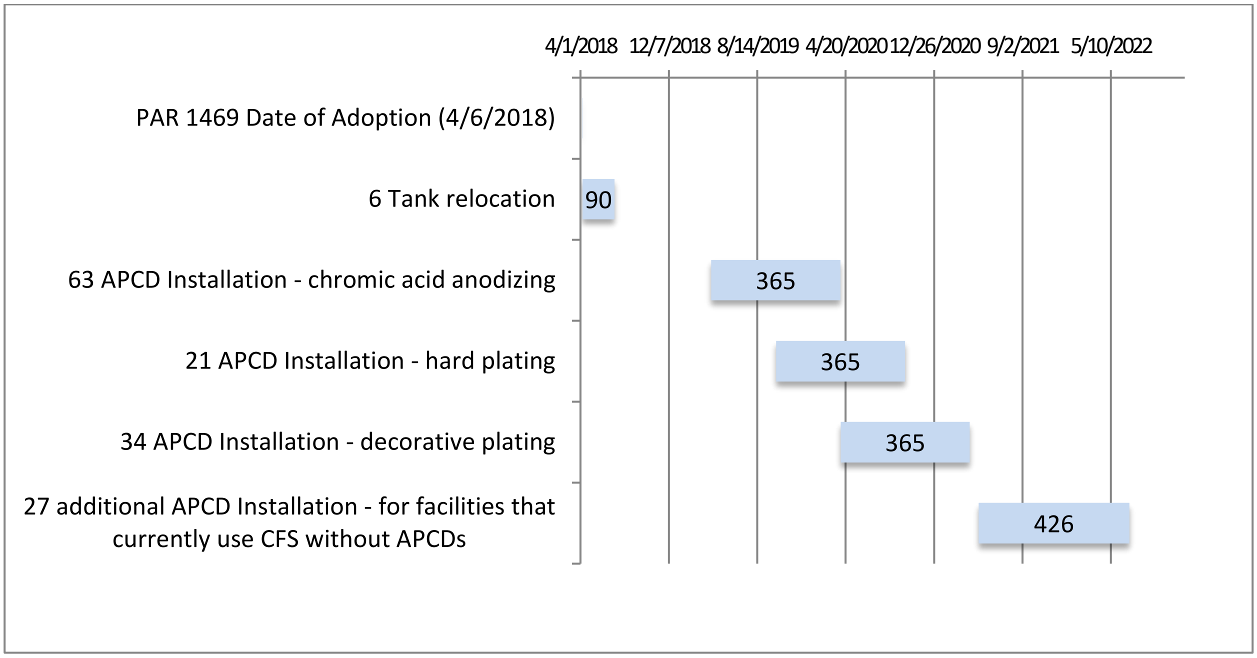
- Some facilities may need to modify the buildings in which the tanks are operating in order to comply with the ~~three percent~~ 3.5% building enclosure requirement in subdivision (e). Based on observations from site visits and survey results, the building improvements that may be necessary are expected to be minor. For example, to achieve a building enclosure, some buildings may only need to have the doors, windows, and other openings closed or a roll-up door or plastic strip curtains installed. These activities can be accomplished with one to several employees in a short period of time (from one to three days) using hand tools and onsite materials. Therefore, the environmental impacts associated with the building improvement activities that may be employed to comply with the 3.5% ~~three percent~~ building enclosure requirement are considered to be negligible and are not included in this analysis.

- The timing of when PTEs are expected to be constructed is dependent on criteria outlined in subdivision (t). For example, a PTE installation will be required for any facility that has consistently shown the equipment cannot meet the point source emission requirement or if operators fail to adhere to the requirements to shut down a tank that fails specific parameter monitoring provisions. Also, a PTE would be required in the event of not passing a source test or operating a tanks without the proper add-on air pollution control device. This analysis assumes that two facilities will trigger the requirement to install a total of two PTEs. A total of two PTEs are assumed to be installed over a four-month between March 2020 and July 2021.

- Figure 2-1 illustrates the estimated construction days and schedule per requirement and tank types at the time the Draft EA was released for public review and comment.

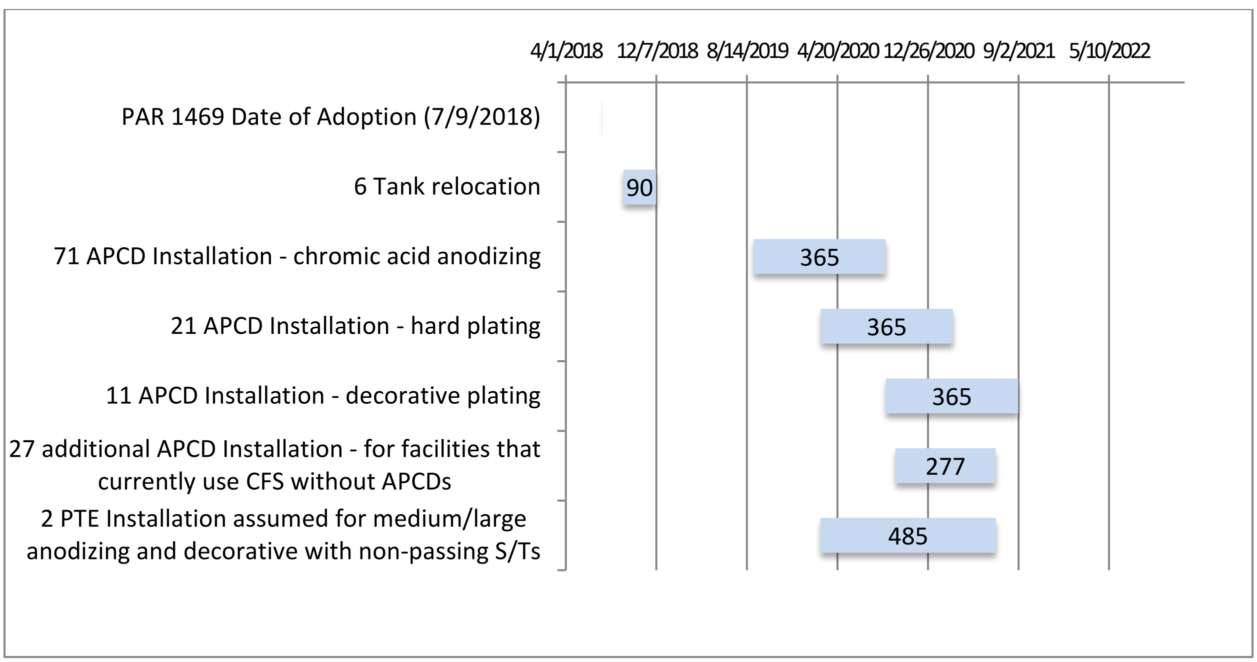
- Figure 2-2 illustrates the revised estimated construction days and schedule per requirement and tank types to reflect the latest version of PAR 1469 that is addressed in ~~at the time of~~ thise Final EA[10].

[10] At the time of both the August 2018 Final EA and October 2018 Revised Final EA.



Key: APCD = Air Pollution Control Device; and CFS = chemical fume suppressant

Figure 2-1
Estimated Construction Days and Schedule by Different Rule Requirements And Tank Types as presented in the Draft EA



Key: S/T = Source Test; APCD = Air Pollution Control Device; and CFS = chemical fume suppressant

Figure 2-2
Revised Estimated Construction Days and Schedule by Different Rule Requirements And Tank Types as presented in the Final EA[11]

[11] At the time of both the Final EA and Revised Final EA.

- According to the construction schedule in Table 2-3 and Figure 2-~~1~~2, a total of 130 APCDs and two PTEs will be installed. For the "worst-case" peak construction day, the analysis in the Draft EA assumed that 12 APCDs would be constructed on a given day. To adjust the analysis to reflect the revisions to PAR 1469 that occurred after the release of the Draft EA for public review and comment, the analysis has been revised to assume that 12 APCDs plus two PTEs would be constructed on a peak day. For the purpose of this analysis, the construction needed to build two PTEs is equivalent to constructing two APCDs over a five-month period from March 2020 to September 2020.~~on a "worst-case" peak construction day, up to 12 APCDs are assumed to be constructed on a given day from 10/1/2019 to 4/1/2020.~~

- The installation of one APCD will require one air compressor, one welder, one forklift, and one aerial lift to operate four hours per day for five days and will require a construction crew consisting of six members (1 vendor driving a medium duty delivery truck (MDT) and 5 workers driving light duty vehicles (LDA/LDT1/LDT2)).

- The relocation of one tank will require~~s~~ one forklift and one welder to operate four hours per day for one day. The analysis assumes that only one construction crew (the welder who is not a facility employee) will drive one LDA/LDT1/LDT2 vehicle to do the welding work. All other work can be done by facility employees.

- CalEEMod version 2016.3.2 will be used to analyze the emissions from vehicle trips during construction.

- Up to 89 ~~98~~ facilities will need to comply with either the full or screening source testing requirements described in subdivision (k) of PAR 1469 for the Tier III tanks. Owners/operators of affected facilities would be expected to hire a source testing company to do the work. This analysis assumes that one source testing vehicle (LDT) with a 2-person crew and one maintenance truck (MDV) with a 2-person crew will each drive approximately 40 miles round trip each day to conduct the required source tests or emission screening tests at each facility. These activities are considered operational impacts.

- For "worst-case" peak operation day, up to four source testing vehicles and four maintenance trucks will be conducting source tests or emissions screening tests on the same day.

- Any facility that exceeds the source test limits in PAR 1469 after re-testing will be required to install a permanent total enclosure with negative air. The installation of the permanent total enclosure and negative air will have associated vehicle and equipment to complete the installation and these activities are considered construction impacts. Implementing negative air pressure control system will have associated electricity use. The electricity use is ~~are~~ considered an operational impacts.

- CARB-EMFAC2014 will be used to analyze the emissions from vehicle trips during operation.

- No additional employees are expected to be hired as a result of PAR 1469.

Construction Impacts

Construction emissions were estimated by using the California Emissions Estimator Model® version 2016.3.2 (CalEEMod[12]). To install APCDs and to relocate tanks to the inside of the buildings, the use of the following construction off-road equipment was assumed: air compressor, welder, forklift, and aerial lift[13]. In addition, emissions from all on-road vehicles transporting workers, vendors, and material removal and delivery during construction were also calculated using CalEEMod. The detailed output reports for the CalEEMod runs are included in Appendix C of this Revised Final~~Draft~~ EA. Table 2-4 and Table 2-5 summarize the results of the construction air quality analysis during the tank relocations and APCD installations, respectively. Appendix C also contains the spreadsheets with the results and assumptions used for this analysis.

Table 2-4
Peak Daily Construction Emissions During Tank Relocations[a, b, c, & d]

Construction Activity	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
3 tank relocations occurring on a peak day	1.13	5.43	6.30	0.01	0.75	0.45
Total Peak Daily Construction Emissions	1.13	5.43	6.30	0.01	0.75	0.45
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

a. The emissions are estimated using CalEEMod version 2016.3.2.
b. Tank relocations are expected to occur during the first 90 days after the rule is adopted. Three tank relocations are expected to occur on a peak day.
c. Appendix C contains the detailed calculations.
d. Subsequent to the release of the Draft EA, modifications were made to PAR 1469. However, the calculations in the Draft EA for construction activities relative to relocations were not affected by the modifications made to PAR 1469. Thus, the calculations in this table remain unchanged from the Draft EA and demonstrate that no significant adverse air quality impacts during tank relocation construction activities would be expected to occur.

[12] CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects.

[13] In general, no or limited construction emissions from grading are anticipated because modifications or installation of new APCD would occur at existing industrial/commercial facilities and, therefore, would not be expected to require digging, earthmoving, grading, etc.

Table 2-5
Peak Daily Construction Emissions During APCD and PTE Installations[a, b, c, & d]

Construction Activity	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
12 APCD installations occurring on a peak day	7.17	42.02	46.60	0.08	4.30	3.13
2 PTE installations occurring on a peak day	1.20	7.00	7.80	0.01	0.72	0.52
Total Peak Daily Construction Emissions	8.37 ~~7.17~~	49.02 ~~42.02~~	54.40 ~~46.60~~	0.09 ~~0.08~~	5.02 ~~4.30~~	3.65 ~~3.13~~
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

a. The emissions are estimated using CalEEMod version 2016.3.2.
b. APCD installation is expected to occur one year after the rule is adopted and therefore, these~~is~~ activities have~~s~~ no overlap with tank relocation construction work presented in Table 2-4. ~~It is conservatively~~The analysis assumes~~d~~ that on a ~~in the~~ peak day, there will be 12 APCD and two PTE installations ~~work~~ among PAR1469 affected facilities. For the purpose of this analysis, the construction needed to build two PTEs is equivalent to constructing 2 APCDs.
c. Appendix C contains the detailed calculations.
d. Subsequent to the release of the Draft EA, modifications were made to PAR 1469 and the calculations were revised to include construction emissions from two PTEs. Nonetheless, even with the additional emissions occurring on a peak day during construction, no significant air quality impacts during construction would be expected to occur.

The construction impact analysis assumes that it will take one week each to complete one APCD installation or one tank relocation. However, the actual construction time could be substantially less than one week for some facilities.

Based on the construction schedule in Table 2-3 and Figure 2-1, the peak daily emissions are expected to occur over a five-month period from ~~10/1/2019~~ March 2020 to ~~4/1/2020~~ September 2020~~, which assuming up to 12 APCD installations would occur on a peak day~~. Further, given the duration of the construction that each facility may undergo and the total 41-month timeframe for all the affected facilities to comply with the requirements in PAR 1469, the construction phases for some facilities were assumed to overlap which resulted in 12 APCD and two PTE installations occurring on a peak day. Installation of the APCDs and PTEs is expected to occur starting from the second year after the rule is adopted~~ and up to 12 APCD is expected to occur on a peak day~~. Tank relocations are expected to occur during the first 90 days after the rule is adopted and up to three tank relocations are expected to occur on a peak day.

As shown in Tables 2-4 and 2-5, the air quality impacts due to construction from implementing PAR1469 are expected to be less than significant.

Operational Impacts

As explained previously, secondary air quality operational impacts are expected to occur from the following activities: maintenance of the APCDs and conducting periodic source testing. Total operational emissions were estimated using CARB's EMFAC2014[14] for following mobile sources: trucks for waste disposal, filter replacement, and leak detection, and vehicles to transport workers to conduct source testing. Currently, some of the affected facilities have existing APCDs that collect PM ~~which is~~ considered to be hazardous and as such, the PM must~~requires to~~ be periodically sent to a certified landfill or recycling facility for proper disposal or recycling. After PAR 1469 is implemented, additional PM is expected to be collected by the APCDs, but the affected facilities are expected to continue their existing practices for handling their waste. Therefore, it is not expected to have increased waste disposal trucks occurring on a peak day due to implementing PAR 1469.

PAR 1469 would also require source testing of each APCD that is installed. In order to conduct source testing, additional vehicle trips to and from the facility on the day of source testing are expected to occur to transport personnel and equipment for the source test. The APCD maintenance work and source testing is expected to be conducted at 89 ~~98~~ facilities and the following vehicles are assumed to be required per source test each year: one medium duty truck for waste disposal, filter replacement, or filter leak inspection truck; and one source testing vehicle.

Of the 89 ~~98~~ facilities, four facilities are assumed to conduct maintenance of the APCDs and four facilities are assumed to conduct source testing on the same day, such that 4 trucks and 4 vehicles would be operating on a peak day. In addition, a round trip distance of 40 miles was assumed for every on-road vehicle used during operation. The air quality impacts during operation are summarized in Table 2-6. The detailed spreadsheets with the assumptions used for this analysis are provided in Appendix C.

[14] The EMFAC emissions model is developed and used by CARB to assess emissions from on-road vehicles including cars, trucks, and buses in California. EMFAC2014 was approved by U.S. EPA on Dec. 14, 2015. https://www.arb.ca.gov/msei/categories.htm#onroad_motor_vehicles

Table 2-6
Peak Daily Operational Emissions[a, b, c, d, e, & f]

Key Activities During Operation	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Conduct source testing	0.01	0.03	0.39	0.00	0.07	0.72
Conduct maintenance on APCDs	0.01	0.03	0.10	0.00	0.13	0.04
Total Peak Daily Operational Emissions	0.02	0.06	0.48	0.00	0.20	0.75
SIGNIFICANCE THRESHOLD FOR ~~DURING~~ OPERATION	55	55	550	150	150	55
SIGNIFICANT?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

a. It is conservatively assumed in the peak day, there will be an additional four source test vehicles (LDA) and four maintenance trucks (MDT) to all PAR 1469 affected facilities.
b. It is conservatively assumed in the peak year, there will be an additional 89 ~~98~~ source test vehicles (LDA) and 89 ~~98~~ maintenance trucks (MDT) to all PAR 1469 affected facilities.
c. The increased medium duty truck is for the additional waste disposal truck, filter replacement, filter leak inspection and other maintenance work for the APCDs.
d. Each LDA and each MDV is assumed to travel a round trip distance of 40 miles.
e. See Appendix C for detailed calculations.
f. Subsequent to the release of the Draft EA, modifications were made to PAR 1469. However, the calculations in the Draft EA for operation were not affected by the modifications made to PAR 1469. Thus, the calculations in this table remain unchanged from the Draft EA and demonstrate that no significant adverse air quality impacts during operation activities would be expected to occur.

As indicated in Table 2-6, operational emissions anticipated from implementing PAR 1469 do not exceed any significance threshold. Therefore, the operational air quality impact is considered less than significant. The proposed project is not expected to result in significant adverse operational criteria pollutant emission impacts.

Construction and Operation Overlap Impact

Given the number of affected facilities and the varying requirements for each affected facility to comply with PAR 1469 requirements, there is a possibility that there will be an overlap of construction activities and corresponding construction emissions occurring at some facilities with operational activities and corresponding operational emissions occurring at other facilities. Based on PAR 1469 requirements, the overlap will occur from the date of adoption of PAR 1469 until September ~~7/1/~~2021 which is when the last APCD installation work is expected to be completed. The most conservative maximum emissions during this overlap period are estimated in Table 2-7 which adds the peak daily construction emissions from Tables 2-4 and 2-5 and the peak daily operational emissions from Table 2-6 and compares the total to the operational emission significance thresholds which are lower than the significance thresholds during construction. Also, according to SCAQMD policy, the peak daily emissions from the construction and operation overlap period should be estimated and compared to the SCAQMD's CEQA significance thresholds for operation.

Table 2-7
Peak Daily Emissions in Construction and Operation Overlap Phase[a, b, & c]

Construction and Operation Overlap Phase	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Peak Construction Emissions	8.37 ~~7.17~~	49.02 ~~42.02~~	54.40 ~~46.60~~	0.09 ~~0.08~~	5.02 ~~4.30~~	3.65 ~~3.13~~
Peak Operational Emissions	0.02	0.06	0.48	0.00	0.20	0.75
Total Emissions	8.39 ~~7.19~~	49.08 ~~42.08~~	54.88 ~~47.08~~	0.09 ~~0.08~~	5.22 ~~4.50~~	4.40 ~~3.88~~
SIGNIFICANCE THRESHOLD FOR OPERATION	55	55	550	150	150	55
SIGNIFICANT?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

a. The maximum construction impact during the overlap phase is conservatively assumed to be the peak daily construction emissions from Table 2-3.
b. The maximum operational impact during the overlap phase is conservatively assumed to be the peak daily operational emissions from Table 2-4.
c. Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the peak daily construction emissions presented in Table 2-5. Even with the revised construction calculations, the overlapping construction and operation activities demonstrates that no significant adverse air quality impacts would be expected to occur.

As indicated in Table 2-7, the peak daily emissions that are expected to occur during the construction and operational overlap period anticipated from implementing PAR 1469 do not exceed any of the SCAQMD's CEQA air quality significance thresholds. Therefore, the air quality impacts from construction and operation overlap are considered to be less than significant. In conclusion, the proposed project is not expected to result in significant adverse air quality impacts during the construction and operation overlap period.

Indirect Criteria Pollutant Emissions from Electricity Consumption

Indirect criteria pollutant and GHG emissions are expected from the generation of electricity to operate new APCDs that occurs off-site at electricity generating facilities (EGFs). Emissions from electricity generating facilities are already evaluated in the CEQA documents for EGF projects when they are built or modified. The analysis in Section VI - Energy b), c) and d) demonstrates that there is sufficient capacity from power providers for the increased electricity consumption needed to implement PAR 1469.

Under the SCAQMD's RECLAIM program, EGFs were provided or purchased annual allocations of NOx and SOx emissions that decline over time and these allocations are generally sufficient to cover the EGFs current customer usage and projected future growth. ~~However,~~ While PAR 1469 will cause an increase in energy use and a corresponding increase in emissions from the EGFs providing additional electricity (see Section VI - Energy for the analysis of the energy impacts), the projected minimal increase in NOx and SOx emissions would be expected to fall within the range of the EGF's annual allocations for these pollutants. If the annual allocations are not sufficient, a~~A~~ny new potential NOx and SOx emission increases at the EGFs beyond the annual allocations would need to be offset under the RECLAIM program in accordance with SCAQMD Regulation XX and increases in other pollutants would need to be offset under the New Source Review program in accordance with SCAQMD Regulation XIII – New Source Review. Thus, air quality impacts from electricity consumption are anticipated to be less than significant, because they were either previously evaluated and offset or will be evaluated under the New Source Review and additional offsets would be applied.

III. c) Less Than Significant Impact.

Cumulatively Considerable Impacts
Based on the foregoing analysis, since project-specific criteria pollutant air quality impacts from implementing PAR 1469 would not be expected to exceed the air quality significance thresholds in Table 2-1, cumulative air quality impacts are also expected to be less than significant. SCAQMD cumulative significance thresholds are the same as project-specific significance thresholds. Therefore, potential adverse impacts from implementing PAR 1469 would not be "cumulatively considerable" as defined by CEQA Guidelines Section 15064(h)(1) for air quality impacts. Per CEQA Guidelines Section 15064(h)(4), the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.

The SCAQMD guidance on addressing cumulative impacts for air quality is as follows: "As Lead Agency, the SCAQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR." "Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."[15]

This approach was upheld by the court in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334. The Court determined that where it can be found that a project did not exceed the South Coast Air Quality Management District's established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in a cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines Section 15064.7, stating, "The lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect." The court found that, "Although the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria…". "Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact." ~~As in *Chula Vista* and *Rialto Citizens for Responsible Growth*, here the SCAQMD has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established SCAQMD significance thresholds. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899.~~ In *Rialto Citizens for Responsible Growth*, the court upheld the SCAQMD's approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899. As in *Chula Vista* and *Rialto Citizens for Responsible Growth*, here the SCAQMD has demonstrated, when using accurate and

[15] SCAQMD Cumulative Impacts Working Group White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution, August 2003, Appendix D, Cumulative Impact Analysis Requirements Pursuant to CEQA, at D-3. http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf.

appropriate data and assumptions, that the project will not exceed the established SCAQMD significance thresholds. Thus, it may be concluded that the proposed project will not contribute to a significant unavoidable cumulative air quality impact.

III. d) Less Than Significant Impact. Diesel particulate matter (DPM) is considered a carcinogenic and chronic toxic air contaminant (TAC). Since the diesel equipment used during the construction of the tank relocation or APCD installation is expected to be a short-term project (i.e. no more than six months at any facility), a Health Risk Assessment (HRA) was not conducted. In addition, implementation of PAR 1469 is expected to create an environmental benefit by reducing toxic impacts by controlling fugitive PM emissions (containing hexavalent chromium) during operation. The analysis in Section III. b) and f) concluded that the quantity of pollutants that may be generated from implementing the proposed project would be less than significant during construction, operation, and the construction and operation overlap period. Thus, the quantity of pollutants that may be generated from implementing PAR 1469 would not be considered substantial, irrespective of whether sensitive receptors are located near the affected facilities. For these reasons, implementation of PAR 1469 is not expected to expose sensitive receptors to substantial pollutant concentrations. Therefore, no significant adverse air quality impacts to sensitive receptors are expected from implementing PAR 1469.

III. e) Less Than Significant Impact.

Odor Impacts

As previously explained, this analysis assumes that new or modified APCDs will be constructed and some tanks will be relocated at the affected facilities and these facilities already operate diesel equipment and trucks. With regard to odors, currently, for all diesel-fueled equipment and vehicles, the diesel fuel is required to have a low sulfur content (e.g., 15 ppm by weight or less) in accordance with SCAQMD Rule 431.2 – Sulfur Content of Liquid Fuels. Such fuel is expected to minimize odor. The operation of construction equipment will occur within the confines of existing affected facilities. Dispersion of diesel emissions over distance generally occurs so that odors associated with diesel emissions may not be discernable to offsite receptors, depending on the location of the equipment and its distance relative to the nearest offsite receptor. Further, the diesel trucks that will be operated onsite will not be allowed to idle longer than five minutes per any one location in accordance with the CARB idling regulation, so odors from these vehicles would not be expected for a prolonged period of time. Therefore, the addition of several pieces of construction equipment and trucks that will operate intermittently, over a relatively short period of time, are not expected to generate diesel exhaust odor substantially greater than what is already typically present at the affected facilities.

Operation of the new APCDs are also not expected to generate any new odors because these devices are electric and the process of collecting the metal PM in enclosed bags, containers and filters would mean that these odorous materials would be captured, such that the existing odor profiles at the affected facilities would be reduced. PAR 1469 prohibits the operation of Tier III tanks outside of a building and requires all affected facilities to conduct operations of ~~at~~ hexavalent chromium-containing tanks inside the building. The building enclosure requirements in PAR 1469 will also reduce odors at these facilities. Thus, PAR 1469 is not expected to create significant adverse objectionable odors during construction or operation. Since no significant impacts were identified for this issue, no mitigation measures for odors are necessary or required.

III. g) and h) Less Than Significant Impact.

Greenhouse Gas (GHG) Impacts

Significant changes in global climate patterns have recently been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of GHG emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through the combustion of fossil fuels (i.e., fuels containing carbon) in conjunction with other human activities, appears to be closely associated with global warming. State law defines GHG to include the following: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6) (Health and Safety Code Section 38505(g)). The most common GHG that results from human activity is CO2, followed by CH4 and N2O.

Traditionally, GHGs and other global warming pollutants are perceived as solely global in their impacts and that increasing emissions anywhere in the world contributes to climate change anywhere in the world. However, a study conducted on the health impacts of CO2 "domes" that form over urban areas cause increases in local temperatures and local criteria pollutants, which have adverse health effects[16].

The analysis of GHGs is different than the analysis of criteria pollutants for the following reasons. For criteria pollutants, the significance thresholds are based on daily emissions because attainment or non-attainment is primarily based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects on human health (e.g., one-hour and eight-hour standards). Since the half-life of CO2 is approximately 100 years, for example, the effects of GHGs occur over a longer term. They affect the global climate over a relatively long timeframe. As a result, the SCAQMD's current position is to evaluate the effects of GHGs over a longer timeframe than a single day (i.e., annual emissions). GHG emissions are typically considered to have a cumulative impact because they contribute to global climate effects.

GHG emission impacts from implementing PAR 1469 were calculated at the project-specific level during construction and operation. For example, installation and operation of APCD has the potential to increase the use of fuel during construction and electricity during operation which will in turn increase CO_2 emissions.

The SCAQMD convened a Greenhouse Gas CEQA Significance Threshold Working Group to consider a variety of benchmarks and potential significance thresholds to evaluate GHG impacts. On December 5, 2008, the SCAQMD adopted an interim CEQA GHG Significance Threshold for projects where SCAQMD is the lead agency (SCAQMD 2008). This GHG interim threshold is set at 10,000 metric tons of CO_2 equivalent emissions (CO_2e) per year (MT/yr). Projects with incremental increases below this threshold will not be cumulatively significant ~~considerable~~.

[16] Jacobsen, Mark Z. "Enhancement of Local Air Pollution by Urban CO2 Domes," Environmental Science and Technology, as describe in Stanford University press release on March 16, 2010 available at: http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html.

Table 2-8 summarizes the GHG analysis which shows that PAR 1469 may result in the generation of 6.21~~6.81~~ amortized[17] MT/yr of CO2e emissions during construction and 3.29 MT/yr of CO2e emissions from mobile sources and 82.90 MT/yr of CO2e emissions from electricity usage during operation from all the affected facilities for a total of 93.00 MT/yr of CO2e emissions, which is less than the SCAQMD significance threshold of 10,000 MT/yr of CO2e. The detailed calculations of project GHG emissions can be found in Appendix C.

Table 2-8
GHG Emissions From 89 ~~98~~ Affected Facilities[18]

Activity	CO_2e (MT/year[a])
Construction [b]	6.21 ~~6.81~~
Operation – mobile sources	3.29
Operation – electricity usage	82.90
Total Project Emissions	93.00
SIGNIFICANCE THRESHOLD	**10,000**
SIGNIFICANT?	**NO**

a. 1 metric ton = 2,205 pounds
b. GHGs from short-term construction activities are amortized over 30 years

Thus, as shown in Table 2-8 the SCAQMD's GHG significance threshold for industrial sources will not be exceeded. For this reason, implementing the proposed project is not expected to generate significant adverse cumulative GHG air quality impacts. Further, PAR 1469 is not expected to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG gases.

Conclusion

Based upon these considerations, significant air quality and GHG emissions impacts are not expected from implementing PAR 1469. Since no significant air quality and GHG emissions impacts were identified, no mitigation measures are necessary or required.

Subsequent to the release of the Draft EA for public review and comment, modifications were made to PAR 1469 that caused some of the calculations in this section to be revised. Staff has reviewed the modifications to PAR 1469 and the revised calculations and concluded that none of the revisions constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the Draft EA. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects.

17 GHGs from short-term construction activities are amortized over 30 years. To amortize GHGs from temporary construction activities over a 30-year period (est. life of the project/ equipment), the amount of CO_2e emissions during construction are calculated and then divided by 30.

18 Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the peak daily construction GHG emissions. Even with the revised construction GHG calculations, and the overlap of construction and operation activities, no significant adverse GHG impacts are expected to occur.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IV.	**BIOLOGICAL RESOURCES.** Would the project:				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☑
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
f)	Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

Significance Criteria

Impacts on biological resources will be considered significant if any of the following criteria apply:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

IV. a), b), c), & d) No Impact. The proposed project does not require the acquisition of land or building new structures, or construction on green land to comply with the provisions of PAR 1469. The sites of the affected facilities that would be subject to PAR 1469 currently do not support riparian habitat, federally protected wetlands, or migratory corridors because they are existing developed and established facilities currently used for industrial purposes. Additionally, special status plants, animals, or natural communities identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service are not expected to be found on or in close proximity to the affected facilities because the affected facilities are in existing industrial, commercial or mixed land use areas. Therefore, PAR 1469 would have no direct or indirect impacts that could adversely affect plant or animal species or the habitats on which they rely in the District.

Compliance with PAR 1469 is expected to reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations at the affected facilities, which would be expected to improve, not worsen, present conditions of plant and animal life, since previously uncontrolled hexavalent chromium emissions would be captured and disposed of properly before they could have the potential to impact plant and animal life. PAR 1469 does not require acquisition of additional land or further conversions of riparian habitats or sensitive natural communities where endangered or sensitive species may be found. Finally, the APCDs contemplated as part of implementing PAR 1469 would be installed at existing facilities and would not be built on or near a wetland or in the path of migratory species. Therefore, PAR 1469 would have no direct or indirect impacts that could adversely affect plant or animal species or the habitats on which they rely in the SCAQMD.

IV. e) & f) No Impact. The proposed project is not envisioned to conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans. Land use and other planning considerations are determined by local governments and no land use or planning requirements would be altered by implementing PAR 1469. Additionally, PAR 1469 would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan, and would not create divisions in any existing communities because all activities associated with complying with PAR 1469 would occur at existing facilities in previously disturbed areas which are not typically subject to Habitat or Natural Community Conservation Plans.

The SCAQMD, as the Lead Agency, has found that, when considering the record as a whole, there is no evidence that implementing of PAR 1469 would disturb habitat, or would have potential for any new adverse effects on wildlife resources or the habitat upon which wildlife depends. Accordingly, based upon the preceding information, the SCAQMD has, on the basis of substantial evidence, rebutted the presumption of adverse effect contained in Title 14 of the California Code of Regulations Section 753.5 (d) - Projects Eligible for a No Effect Determination.

Conclusion

Based upon these considerations, significant biological resource impacts are not expected from implementing PAR 1469. Since no significant biological resource impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
V.	**CULTURAL RESOURCES.** Would the project:				
a)	Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☑
b)	Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5?	☐	☐	☐	☑
c)	Directly or indirectly destroy a unique paleontological resource, site, or feature?	☐	☐	☐	☑
d)	Disturb any human remains, including those interred outside formal cemeteries?	☐	☐	☐	☑
e)	Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074?	☐	☐	☐	☑

Significance Criteria

Impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance, or tribal cultural significance to a community or ethnic or social group or a California Native American tribe.
- Unique paleontological resources or objects with cultural value to a California Native American tribe are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

V. a), b), c), d) & e) No Impact. There are existing laws in place that are designed to protect and mitigate potential impacts to cultural resources. For example, CEQA Guidelines state that generally, a resource shall be considered "historically significant" if the resource meets the criteria for listing in the California Register of Historical Resources, which include the following:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values;
- Has yielded or may be likely to yield information important in prehistory or history (CEQA Guidelines §15064.5).

Buildings, structures, and other potential culturally significant resources that are less than 50 years old are generally excluded from listing in the National Register of Historic Places, unless they are shown to be exceptionally important. For any of the buildings or structures that may be affected by PAR 1469 that are older than 50 years, they are buildings that are currently utilized for industrial purposes and would generally not be considered historically significant since they would not have any of the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values. Therefore, PAR 1469 is not expected to cause any impacts to significant historic cultural resources.

Construction-related activities are expected to be confined within the existing footprint of the affected facilities that have already been fully developed and paved, PAR 1469 is not expected to require physical changes to the environment which may disturb paleontological or archaeological resources. Furthermore, it is envisioned that these areas are already either devoid of significant cultural resources or whose cultural resources have been previously disturbed. Therefore, PAR 1469 has no potential to cause a substantial adverse change to a historical or archaeological resource, directly or indirectly to destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains, including those interred outside formal cemeteries. Implementing of PAR 1469 is, therefore, not anticipated to result in any activities or promote any programs that could have a significant adverse impact on cultural resources in the District.

PAR 1469 is not expected to require physical changes to a site, feature, place, cultural landscape, sacred place or object with cultural value to a California Native American Tribe. Furthermore, PAR 1469 is not expected to result in a physical change to a resource determined to be eligible for inclusion or listed in the California Register of Historical Resources or included in a local register of historical resources. For these reasons, PAR 1469 is not expected to cause any substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074.

As part of releasing this CEQA document for public review and comment, the SCAQMD also provided a formal notice of the proposed project to all California Native American Tribes (Tribes) that requested to be on the Native American Heritage Commission's (NAHC) notification list per

Public Resources Code Section 21080.3.1(b)(1). The NAHC notification list provides a 30-day period during which a Tribe may respond to the formal notice, in writing, requesting consultation on the proposed project.

In the event that a Tribe submits a written request for consultation during this 30-day period, the SCAQMD will initiate a consultation with the Tribe within 30 days of receiving the request in accordance with Public Resources Code Section 21080.3.1(b). Consultation ends when either: 1) both parties agree to measures to avoid or mitigate a significant effect on a Tribal Cultural Resource and agreed upon mitigation measures shall be recommended for inclusion in the environmental document [see Public Resources Code Section 21082.3(a)]; or, 2) either party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached [see Public Resources Code Section 21080.3.2(b)(1)-(2) and Section 21080.3.1(b)(1)].

Conclusion

Based upon these considerations, significant adverse cultural resources impacts are not expected from implementing PAR 1469. Since no significant cultural resources impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VI.	**ENERGY.** Would the project:				
a)	Conflict with adopted energy conservation plans?	☐	☐	☐	☑
b)	Result in the need for new or substantially altered power or natural gas utility systems?	☐	☐	☐	☑
c)	Create any significant effects on local or regional energy supplies and on requirements for additional energy?	☐	☐	☐	☑
d)	Create any significant effects on peak and base period demands for electricity and other forms of energy?	☐	☐	☐	☑
e)	Comply with existing energy standards?	☐	☐	☐	☑

Significance Criteria

Impacts to energy resources will be considered significant if any of the following criteria are met:

- The project conflicts with adopted energy conservation plans or standards.
- The project results in substantial depletion of existing energy resource supplies.
- An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
- The project uses non-renewable resources in a wasteful and/or inefficient manner.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

VI. a) & e) No Impact. PAR 1469 is not expected to conflict with any adopted energy conservation plans or violate any energy conservation standards because existing facilities would be expected to continue implementing any existing energy conservation plans that are currently in place regardless of whether PAR 1469 is implemented.

PAR 1469 is not expected to cause new development because it does not require new facilities to be built. While PAR 1469 will primarily apply to existing facilities, it will also apply to any new facilities that may be built in the future. However, SCAQMD staff is not aware of any new chromium electroplating and chromic acid anodizing operations facilities planned to be constructed in the immediate future and is unable to speculate, predict, or forecast, when, if any, would be built in the long-term. Any energy resources that may be necessary to install building enclosures, air pollution control equipment, conduct source tests, conduct monitoring and employ housekeeping would be used to achieve reductions in hexavalent chromium from chromium electroplating and chromic acid anodizing operations facilities, and therefore, would not be using non-renewable resources in a wasteful manner. The air quality benefits that would be expected to occur as a result of implementing these activities would not require utilities that would provide additional electricity and natural gas to the affected facilities to substantially alter power or natural gas system because any additional energy needed to implement PAR 1469 can be provided from existing supplies. For these reasons, PAR 1469 would not be expected to conflict with energy conservation plans or existing energy standards, or use non-renewable resources in a wasteful manner.

VI. b), c) & d) Less Than Significant Impact. PAR 1469 will increase the use of electricity from the operation of newly installed APCDs, including the blower and filtration systems needed to create enough flow rate to the filtration system. Diesel fuel would be consumed by construction equipment during construction phase. Gasoline fuel would be consumed by vehicles used during construction and operation. No natural gas will be needed during construction. The following sections evaluate the various forms of energy sources that may be affected by the implementation of PAR 1469.

Construction

During construction, diesel and gasoline fuel will be consumed by portable construction equipment (e.g., welders, forklifts, and etc.) needed to install the APCDs and to relocate the tanks and by construction workers' vehicles and vendor trucks traveling to and from each facility. To estimate "worst-case" energy impacts associated with construction activities, SCAQMD staff took the total construction SOx emissions to scale to the total diesel fuel usage since the estimated SOx emissions during construction are derived from CARB's OFFROAD2011 and EMFAC2014 models. These two models both calculate the SOx emissions based on the mass-balanced method and the sulfur content in the fuel. Therefore, the total diesel fuel consumption from construction associated equipment and trucks can be estimated by scaling the SOx emissions from one single piece of construction equipment with known diesel fuel usage in gallons per day to the total construction SOx emissions. Appendix C contains the assumptions and calculations for estimating fuel usage associated with construction.

The fuel usage per construction worker commute round trips was calculated by assuming that each workers' gasoline vehicle would get a fuel economy rate of approximately 20 miles per gallon and would travel 29.4 miles round trip to and from the construction site in one day based on default values in CalEEMod. Table 2-9 lists the projected energy impacts associated with the construction from all affected facilities.

Table 2-9
Total Projected Fuel Usage for Construction Activities[19]

Fuel Type	Year 2016 Estimated Basin Fuel Demand[a] (mmgal/yr)	Fuel Usage[b] (mmgal)	Total % Above Baseline	Exceed Significance Thresholds?[c]
Diesel	749	0.0085 ~~0.0093~~	0.0011 ~~0.0012~~	No
Gasoline	6,997	0.0012	0.00002	No

[a] California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets, 2017 California Energy Commission (http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html). [Accessed February 6, 2018.]
[b] Estimated peak fuel usage from construction activities. Diesel usage estimates are based on the usage of portable construction equipment. Gasoline usage estimates are derived from construction workers' and vendor vehicle daily trips to and from work.
[c] SCAQMD's energy threshold for both types of fuel used is 1% of fuel supply.

The 2016 California Annual Retail Fuel Outlet Report Results from the California Energy Commission (CEC) state that 749 million gallons of diesel and 6,997 million gallons of gasoline were consumed in 2016 in the Basin. Thus, if an additional 9,293 gallons of diesel consumed (0.0012% above baseline) and 1,248 gallons of gasoline are consumed (0.00002% above baseline) during construction, they are below SCAQMD's 1% significance threshold for fuel supply. No significant adverse impact on fuel supplies would be expected.

Operation

Electricity Use

SCAQMD staff estimates there will be additional electricity usage for the new or modified APCDs, including the blower and filtration, which are expected to be powered by electricity. The analysis assumes that 132 ~~145~~ additional blowers would be needed to operate the APCD at 89 ~~98~~ facilities. The additional electricity consumption from operation is estimated and presented in Table 2-10. Electrical energy impacts associated with project operation are considered less than significant.

Table 2-10
PAR 1469 Additional Electricity Consumption from Operation[20]

Energy Use	Consumption (GW-h)
APCD: Blowers and Filtration System (100 bhp @ 0.001788 GW-h) x 132 ~~145~~	0.236 ~~0.259~~
SCAQMD Basin Electricity End Use Consumption [a,b]	120,210
Total Impact % of Capacity	**0.0002**
SIGNIFICANT?[c] ~~[b]~~	**NO**

[a] Final 2016 SCAQMD AQMP Chapter 10, 2012 Electricity Use in GWh (http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp)
[b] It is assumed the energy supply is equal to energy consumption.
[c] SCAQMD's energy threshold for electricity is 1% of supply.

[19] Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the peak daily fuel use during construction. Even with the revised fuel use calculation, the analysis demonstrates that no significant adverse fuel impacts would be expected to occur.

[20] Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the projected electricity consumption. Even with the revised electricity calculation, the analysis demonstrates that no significant adverse electricity impacts would be expected to occur.

Gasoline Use From Operational Vehicles

Additional vehicle trips are expected to be needed for the additional source testing and APCD maintenance work (filter replacement or inspection, and disposal of waste). Each vehicle is assumed to drive approximately 40 miles, round trip, with a fuel economy of approximately 20 miles per gallon (mpg) for LDA/LDT and 10 mpg for MDT. As previously explained in Section III - Air Quality and Greenhouse Gases, by assuming that each affected 89 ~~98~~ facility will need one LDA/LDT and one MDT per year and the corresponding annual total gasoline use would be approximately 588 gallons per year.

The 2016 California Annual Retail Fuel Outlet Report Results from California Energy Commission states that 6,997 million gallons of gasoline are consumed in 2016 in the Basin. Thus, based on the foregoing analysis and the summary presented in Table 2-11, an additional 588 gallons of gasoline consumed per year of operation at all 89 ~~98~~ affected facilities is not expected to have a significant adverse impact on fuel supplies.

Table 2-11
Annual Total Projected Fuel Usage for Operational Activities[21]

Type of Equipment	Gasoline (gal/yr)
LDA/LDT	178 ~~196~~
MDT	356 ~~392~~
Total:	534 ~~588~~
Year 2016 Estimated Basin Fuel Demand (gal/yr) [a]	6,997,000,000
Total % Above Baseline	0.00001
SIGNIFICANT?[b]	**NO**

[a] California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets, 2017 California Energy Commission (http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html). [Accessed February 6, 2018.]

[b] SCAQMD's energy threshold for fuel used is 1% of fuel supply.

Natural Gas Impacts

None of the APCD requires natural gas for operation as these units require electricity. Similarly, none of the vehicles that may be needed to deliver supplies or haul away waste would require natural gas. Thus, no natural gas would be required to implement PAR 1469.

Based on the foregoing analysis, the operational-related activities associated with the implementation of PAR 1469 are necessary and will not use energy in a wasteful manner and will not result in substantial depletion of existing energy resource supplies. Further, as shown in the preceding analysis, the quantities of electricity, gasoline and diesel fuel needed to implement PAR 1469 would not create a significant demand of energy when compared to existing supplies. Thus, there are no significant adverse energy resources impacts associated with the implementation of PAR 1469.

[21] Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the fuel use during operation. Even with the revised fuel use calculation, the analysis demonstrates that no significant adverse fuel impacts would be expected to occur.

Conclusion

Based upon these considerations, significant adverse energy impacts are not expected from implementing PAR 1469. Since no significant energy impacts were identified, no mitigation measures are necessary or required.

Subsequent to the release of the Draft EA for public review and comment, modifications were made to PAR 1469 that caused some of the calculations in this section to be revised. Staff has reviewed the modifications to PAR 1469 and the revised calculations and concluded that none of the revisions constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the Draft EA. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☑
• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☐	☑
• Strong seismic ground shaking?	☐	☐	☐	☑
• Seismic–related ground failure, including liquefaction?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☑
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☑
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☑
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑

Significance Criteria

Impacts on the geological environment will be considered significant if any of the following criteria apply:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction, or over covering of large amounts of soil.
- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.
- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

VII. a), b), c), d), & e) No Impact. Since PAR 1469 would result in installing or modifying APCDs, relocating tanks, and installing building enclosures activities at existing facilities located in developed, mostly industrial and commercial settings, no site preparation is anticipated that could adversely affect geophysical conditions in the District. The proposed project does not cause or require a new facility to be constructed.

Southern California is an area of known seismic activity. As part of the issuance of building permits, local jurisdictions are responsible for assuring that the Uniform Building Code is adhered to and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represents the foundation condition at the site. The Uniform Building Code requirements also consider liquefaction potential and establish stringent requirements for building foundations in areas potentially subject to liquefaction.

Accordingly, the installation of new or modification of existing APCDs at existing facilities to comply with PAR 1469 is expected to conform to the Uniform Building Code and all other applicable state and local building codes. Structures must be designed to comply with the Uniform Building Code Zone 4 requirements if they are located in a seismically active area. The local city or county is responsible for assuring that the existing affected facilities comply with the Uniform Building Code as part of the issuance of the building permits and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The goal of the code is to provide structures that will: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage but with some non-structural damage; and, 3) resist major earthquakes without collapse but with some structural and non-structural damage.

The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The Uniform Building Code bases seismic design on minimum lateral seismic forces ("ground shaking"). The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represent the foundation conditions at the site. The Uniform Building Code requirements also consider liquefaction potential and establish stringent requirements for building foundations in areas potentially subject to liquefaction.

Accordingly, existing buildings and equipment, as well as any that may be modified or replaced as a result of PAR 1469, are likely to conform to the Uniform Building Code and all other applicable state codes in effect at the time they were constructed. Thus, PAR 1469 would not alter the exposure of people or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards. As a result, substantial exposure of people or structures to the risk of loss, injury, or death involving the rupture of an earthquake fault, seismic ground shaking, ground failure or landslides is not anticipated.

Since PAR 1469 would only require facilities to install or modify APCDs and to relocate tanks, it does not involve construction activities that will result in substantial soil erosion or the loss of topsoil. Since PAR 1469 will affect existing facilities, it is expected that the soil types present at the affected facilities will not be made further susceptible to expansion or liquefaction. Furthermore, subsidence is not anticipated to be a problem since only minor excavation, grading, or filling activities, if any, are expected to occur at the affected facilities. Additionally, the areas where the existing facilities are located are not envisioned to be prone to new landslide impacts or have unique geologic features since the existing facilities are currently operational. Any new installations or modifications to existing buildings or APCDs would not be expected to increase or exacerbate any existing risks at the affected facility locations. Therefore, because PAR 1469 would not involve locating facilities on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse, no impacts are anticipated.

Since PAR 1469 will affect chromium electroplating and chromic acid anodizing operations at existing facilities by requiring the installation of new or the modification of APCDs and relocation of tanks, people or property will not be exposed to new impacts related to expansive soils or soils incapable of supporting water disposal because no additional water will be necessary to upgrade the building enclosures or operate the APCDs. Further, because each affected facility has an existing sewer system the installation of septic tanks or alternative wastewater disposal systems or modifications to the existing sewer systems would not be necessary. Thus, implementation of

PAR 1469 will not adversely affect soils associated with a installing a new septic system or alternative wastewater disposal system or modifying an existing sewer.

Conclusion

Based upon these considerations, significant adverse geology and soils impacts are not expected from the implementation of PAR 1469. Since no significant geology and soils impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VIII.	**HAZARDS AND HAZARDOUS MATERIALS.** Would the project:				
a)	Create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials?	☐	☐	☑	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment?	☐	☐	☑	☐
c)	Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☑	☐
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment?	☐	☐	☐	☑
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
g)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☑
h)	Significantly increased fire hazard in areas with flammable materials?	☐	☐	☑	☐

Significance Criteria

Impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

VIII. a) & b) Less than Significant Impact. PAR 1469 may increase the amount of hexavalent chromium that is captured by APCDs, in lieu of being directly emitted into the air. Additional metal PM emissions will also be captured through facility owners/operators employing additional housekeeping practices on a regular basis. Overall, the capture of these metal PM emissions would reduce health risks to the public and the environment.

Spent metal and captured metal waste is currently transported from affected facilities to offsite facilities that either recycle or dispose of the metal waste at a hazardous waste landfill. Once PAR 1469 is implemented and the building enclosures upgrades, tank relocations, and APCD installations are completed, the additional metals that will be captured by the new APCDs would continue to be either recycled off-site or hauled away to a hazardous waste landfill, which is what the affected facilities are currently doing. Hence, no new significant hazards are expected to the public or environment through the continued routine transport, disposal or recycling of metal waste generated at affected facilities.

Therefore, PAR 1469 is not expected to create a significant hazard to the public or environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment.

VIII. c) Less than Significant Impact. There are at least 16 facilities that are located within a one-quarter mile of a school. These facilities are identified in Appendix D. PAR 1469, if implemented, would reduce human exposure to hexavalent chromium by requiring metal PM emissions from chromium electroplating and chromic acid anodizing operations to be collected and vented to APCDs instead of being vented to the atmosphere. Other proposed requirements will also reduce those emissions. All of the affected facilities, including the 16 that are located within one-quarter mile of a school, are expected to continue to take the appropriate and required actions to ensure proper handling of existing quantities of hazardous or acutely hazardous materials, substances or wastes that are currently generated. Further, any increased quantities that may be collected at each facility by efficient collection systems and APCDs that will be employed as a result of PAR 1469, would also be expected to be handled in the same or similar manner regardless of each facility's proximity to a school because PAR 1469 does not include new requirements or alter existing requirements for hazardous waste disposal.

VIII. d) No Impact. Government Code §65962.5 refers to hazardous waste handling practices at facilities subject to the Resources Conservation and Recovery Act (RCRA). PAR 1469 would affect 24 facilities that are identified on lists of California Department of Toxics Substances Control hazardous waste facilities per Government Code §65962.5. These facilities are identified in Appendix D. However, compliance with PAR 1469 will ensure that metal PM, which may be toxic and hazardous, will be captured by APCDs. The more material that is captured, the less that will be emitted directly to the atmosphere. Currently, metal PM waste is stored and transported in closed containers and PAR 1469 would not alter existing or add new requirements to change how the metal waste is stored while awaiting to be transported off-site to a recycling facility or a hazardous waste landfill. Hazardous wastes from the existing facilities are required to be managed in accordance with applicable federal, state, and local rules and regulations and compliance with these regulations is expected to continue after PAR 1469 is implemented. Therefore, compliance with PAR 1469 would not create a new significant hazard to the public or environment.

VIII. e) No Impact. Federal Aviation Administration regulations, 14 CFR Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace, provide information regarding the types of projects that may affect navigable airspace. Projects may adversely affect navigable airspace if they involve construction or alteration of structures greater than 200 feet above ground level within a specified distance from the nearest runway or objects within 20,000 feet of an airport or seaplane base with at least one runway more than 3,200 feet in length and the object would exceed a slope of 100:1 horizontally (100 feet horizontally for each one foot vertically from the nearest point of the runway).

Construction activities from implementing the proposed project are expected to occur within the existing confines of the affected facilities. Appendix D identifies 17 facilities that are located within two miles of an airport. However, the installation of APCDs, the upgrades of building enclosures, and the relocation of tanks are expected to be conducted in accordance with all appropriate building, land use and fire codes and any new installations or structures are expected to be well below the height relative to the elevation of existing flight patterns so as to not interfere with plane flight paths consistent with 14 CFR Part 77. Such codes are designed to protect the public from hazards associated with normal operation. Therefore, the proposed project is not expected to result in a safety hazard for people residing or working in the area of the affected facilities even if construction would occur within the vicinity of an airport. Therefore, if the owner/operator of these 17 facilities modifies ~~to~~ their facilities to comply with PAR 1469, the modifications would not be expected to result in a safety hazard for people residing or working in the project area even within the vicinity of an airport.

VIII. f) No Impact. Health and Safety Code Section 25506 et seq. specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering agencies in the emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

- Identification of individuals who are responsible for various actions, including reporting, assisting emergency response personnel and establishing an emergency response team;
- Procedures to notify the administering agency, the appropriate local emergency rescue personnel, and the California Office of Emergency Services;
- Procedures to mitigate a release or threatened release to minimize any potential harm or damage to persons, property or the environment;
- Procedures to notify the necessary persons who can respond to an emergency within the facility;
- Details of evacuation plans and procedures;
- Descriptions of the emergency equipment available in the facility;
- Identification of local emergency medical assistance; and,
- Training (initial and refresher) programs for employees in:
  1. The safe handling of hazardous materials used by the business;
  2. Methods of working with the local public emergency response agencies;
  3. The use of emergency response resources under control of the handler;
  4. Other procedures and resources that will increase public safety and prevent or mitigate a release of hazardous materials.

In general, every county or city and all facilities using a certain amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In conjunction with the California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response plans. These requirements include immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area.

Emergency response plans are typically prepared in coordination with the local city or county emergency plans to ensure the safety of not only the public (surrounding local communities), but the facility employees as well. The proposed project would not impair implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan. Further, the existing facilities already have an emergency response plan in place, as applicable. While the installation of APCDs, building enclosures, and relocation of tanks may require an update of each affected facility’s existing emergency response plan to reflect the new equipment or building modifications, the action of modifying an emergency response plan will not create any environmental impacts. Thus, PAR 1469 is not expected to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

VIII. g) No Impact. The facilities affected by PAR 1469 are currently located in existing industrial, commercial or mixed land use areas and the physical activities that may be taken to comply with PAR 1469 would occur inside existing property boundaries which are not located near wildlands; therefore, there is no existing risk from wildland fires and implementation of PAR 1469 would not create a new risk.

The proposed project would also not increase the existing risk of fire hazards in areas with flammable brush, grass, or trees since no substantial or native vegetation typically exists on or near the facilities (specifically because they could be a fire hazard). Thus, PAR 1469 is not expected to expose people or structures to wildfires. Therefore, no significant increase in wildland fire hazards is expected at the facilities that would be affected by the proposed project.

VIII. h) Less Than Significant Impact. The Uniform Fire Code and Uniform Building Code set standards intended to minimize risks from flammable or otherwise hazardous materials. Local jurisdictions are required to adopt the uniform codes or comparable regulations. Local fire agencies require permits for the use or storage of hazardous materials and permit modifications for proposed increases in their use. Permit conditions depend on the type and quantity of the hazardous materials at the facility. Permit conditions may include, but are not limited to, specifications for sprinkler systems, electrical systems, ventilation, and containment. The fire departments make annual business inspections to ensure compliance with permit conditions and other appropriate regulations. Further, businesses are required to report increases in the storage or use of flammable and otherwise hazardous materials to local fire departments. Local fire departments ensure that adequate permit conditions are in place to protect against the potential risk of upset. PAR 1469 would not change the existing requirements and permit conditions for the proper handling of flammable materials. Further, PAR 1469 does not contain any requirements that would prompt facility owners/operators to begin using new flammable materials. In addition, the National Fire Protection Association has special designations for deflagrations (e.g., explosion prevention) from metal dust. Therefore, operators of metal activities that require baghouse emission control technologies will also need to select reliable, economical and effective means of explosion control such as baghouse explosion suppression, containment and venting. Additional information pertaining to these types of protective measures is available in Chapter 8 of the *Industrial Ventilation, A Manual for Recommended Practice for Design*, 28th Edition, published by the American Conference of Governmental Industrial Hygienists, ©2013.

Conclusion

Based upon these considerations, significant adverse hazards and hazardous materials impacts are not expected from implementing PAR 1469. Since no significant hazards and hazardous materials impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or otherwise substantially degrade water quality?	☐	☐	☑	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☑
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on- or off-site or flooding on- or off-site?	☐	☐	☐	☑
d) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☑
e) Place housing or other structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, which would impede or redirect flood flows?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☑
g)	Require or result in the construction of new water or wastewater treatment facilities or new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
h)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☑	☐
i)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☑	☐

Significance Criteria

Potential impacts on water resources will be considered significant if any of the following criteria apply:

<u>Water Demand:</u>

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use more than 262,820 gallons per day of potable water.
- The project increases demand for total water by more than five million gallons per day.

<u>Water Quality:</u>

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.

- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

IX. a) Less than Significant Impact. PAR 1469 contains requirements for facility owners or operators to conduct chromium electroplating and chromic acid anodizing operations within building enclosures and to vent to APCDs such as HEPA filters when there is a Tier III tank. The APCDs (HEPA filters) do not utilize water as part of their day-to-day functions. Thus, no wastewater will be generated from the use of air pollution control equipment to control emissions from chromium electroplating and chromic acid anodizing activities.

PAR 1469 also contains housekeeping requirements that require facility owners or operators to use approved cleaning methods such as a wet mop, damp cloth, low pressure spray nozzle, wet wash system, or using a high efficiency particulate arrestor (HEPA) vacuum on a daily basis instead of weekly basis. There are 115 facilities that would be required to conduct housekeeping. When employing these housekeeping efforts, PAR 1469 provides facility owners/operators with a choice of using either wet cleaning or dry HEPA vacuuming. If dry HEPA vacuuming is used to comply with the housekeeping requirements, then no water would be needed and no wastewater would be generated.

Nonetheless, wet cleaning has been widely used in many of the affected facilities and PAR 1469 will continue to provide wet cleaning as an option for complying with the housekeeping requirements. For this reason, the analysis assumes that wet cleaning will continue to be employed as a compliant method and if more facilities elect to use wet cleaning, the amount of wastewater generated from wet cleaning would be expected to increase as a result. For any facility owner or operator that chooses to conduct wet cleaning, but that does not currently have a wastewater treatment system or a wastewater discharge permit, the dirty water resulting from wet cleaning would need to be collected, stored and disposed of as hazardous waste and these facilities would be required to comply with the applicable hazardous waste disposal regulations. Thus, the collected dirty water at these facilities would not be allowed to be discharged as wastewater.

For any affected facility that currently has a wastewater discharge permit, the owner or operator will be required to comply with the permitted effluent discharge concentration and flow limits which means ~~the~~ any wastewater generated from conducting housekeeping via the approved wet cleaning method would likely need to be treated prior to discharge.

In either of these scenarios, wet cleaning conducted in accordance with complying with the housekeeping requirements in PAR 1469 would not be expected to violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable of the Publicly Owned Treatment Works (POTW) or Regional Water Quality Control Board, or otherwise substantially degrade water quality that the requirements are meant to protect.

IX. b) No Impact. As previously explained, water is not needed to operate the APCDs in chromium electroplating and chromic acid anodizing operations facilities. For any facility owners or operators that choose to conduct wet cleaning, any additional water that may be needed would likely be supplied by each facility's current water supplier. Further, the quality of water that would likely be supplied to each affected facility will be potable water since potable water is currently supplied at all of the affected facilities in order to provide drinking water for employees, water for sinks and toilets, and water for any landscaping, if applicable. Should any of the affected facilities have a groundwater well onsite with groundwater pumping rights, the facility owners/operators would not likely choose to use groundwater in lieu of potable water to conduct wet cleaning because groundwater typically contains sand and other soil particles and debris which would not be a suitable quality for conducting wet cleaning. Therefore, implementation of PAR 1469 would not be expected to cause facilities to utilize groundwater for conducting wet cleaning, substantially deplete groundwater supplies, or interfere substantially with groundwater recharge.

IX. c) & d) No Impact. PAR 1469 contains requirements for facility owners or operators that conduct chromium electroplating and chromic acid anodizing operations to install APCDs (HEPA filters) which do not utilize water as part of their day-to-day functions. Thus, no new drainage facilities or alterations to existing drainage facilities will be needed beyond what currently exists at the existing facilities. Similarly, there are no streams or rivers running through the properties of the existing facilities, so any construction activities that may occur as a result of complying with PAR 1469 would not be expected to alter the course of a stream or river. PAR 1469 does not contain any requirements that would change existing drainage patterns or the procedures for how surface runoff water is handled. Thus, PAR 1469 is not expected to have any significant adverse effects on any existing drainage patterns, or cause an increase rate or amount of surface runoff water that would exceed the capacity of the facilities' existing or planned storm water drainage systems.

IX. e), f), & g) No Impact. The facilities affected by PAR 1469 are currently located in existing industrial, commercial or mixed land use areas. Since PAR 1469 would result in construction activities at existing facilities to install or modify APCDs and upgrade buildings enclosures and relocate tanks, some minor site preparation and construction activities may be necessary. However, while some new APCDs may be installed at existing facilities, PAR 1469 would not cause or require a new facility or new housing to be constructed. Further, the installation of new

APCDs and the upgrade of building enclosures would occur on-site at the existing facilities. Therefore, PAR 1469 is not expected to result in placing houses or structures within 100-year flood hazard areas that could create new flood hazards or create significant adverse risk impacts from flooding as a result of failure of a levee or dam or inundation by seiches, tsunamis, or mudflows. As explained in Section IX. h) and i) in more detail below, each facility that elects to conduct wet cleaning may need approximately 10 gallons per day and a corresponding amount (e.g., 10 gallons) of wastewater would be generated. Because the generation of 10 gallons per day of wastewater per facility is a relatively minimal amount of water, implementation of PAR 1469 is not expected to require or result in the construction of new water or wastewater treatment or new storm water drainage, or expansion at any of the affected facilities that elect to conduct wet cleaning.

IX. h) & i) Less than Significant Impact. As explained in Section IX. a), PAR 1469 provides facility owners or operators with a choice of using either wet cleaning or dry HEPA vacuuming. If dry HEPA vacuuming is used to comply with the housekeeping requirements, then no water would be needed and no wastewater would be generated. There are 115 facilities that would be required to conduct housekeeping and some facility operators have indicated to SCAQMD staff during site visits that they would prefer to conduct dry HEPA vacuuming in lieu of wet cleaning because dry HEPA vacuuming would allow for the recycling and sale of the captured precious metals. Further, wet cleaning would be less preferable because it would require the use of water and the treatment of the wastewater generated prior to disposal.

Nonetheless, because PAR 1469 provides wet cleaning as an option for complying with the housekeeping requirements, this analysis assumes that some wet cleaning could occur and wastewater may be generated. SCAQMD staff is unable to predict with any precision the number of facilities that will actually elect to conduct wet cleaning, the amount of water that would be needed, and the amount of wastewater that may be generated as part of conducting wet cleaning to comply with PAR 1469.

To get an idea of the scale of water and water quality impacts that might occur from conducting wet cleaning to comply with PAR 1469, SCAQMD staff use the survey data and observations from the site visits to calculate water use estimates for conducting wet cleaning to comply with PAR 1469 based on a peak daily use. For a conservative analysis, all 115 affected facilities are assumed to conduct wet cleaning on the same day to comply with the housekeeping requirements in PAR 1469. Assuming the maximum amount of water that would be needed per facility is approximately 10 gallons for conducting wet cleaning using an approved method, then an equivalent amount of wastewater (e.g., 10 gallons) may also be generated per facility. As such, 1,150 gallons of water per day may be needed for all 115 facilities (e.g., 115 facilities x 10 gallons per day) to conduct wet cleaning and the same amount of wastewater may be generated. Based on some facility owners and operators indicating the use of dry HEPA vacuuming and some facilities currently already conducting wet cleaning, SCAQMD staff believes that the estimated use of water and the corresponding generation of wastewater on a peak day probably substantially overestimates what the actual impact may be. Also, it is important to keep in mind that the maximum amount of water needed to conduct wet cleaning at one facility was estimated to be 10 gallons per day so any wastewater generated at an individual facility should be well within the existing and projected overall capacity of POTWs located throughout the District whenever the wet cleaning activities are conducted. Therefore, wastewater impacts associated with the disposal of waterborne clean-up waste material generated from implementing PAR 1469 are not expected to significantly adversely affect POTW operations. Further, the small volume of wastewater that may be generated from wet cleaning would not be expected to require or warrant the construction of new or the expansion of existing wastewater treatment or storm water drainage facilities. Table 2-12 summarizes the projected amount of water that may be needed for the 115 affected facilities to conduct wet cleaning to comply with the housekeeping requirements in PAR 1469.

Table 2-12
Projected Water Demand

PAR 1469 Wet Cleaning Activity	**Additional Water Demand on a Peak Day (gal/day)**
PAR 1469 Housekeeping Measures	1,150
Significance Threshold for Potable Water:	262,820
SIGNIFICANT FOR POTABLE WATER?	**NO**
Significance Threshold for Total Water:	5,000,000
SIGNIFICANT FOR TOTAL WATER?	**NO**

Therefore, since the estimated potable water demand and total water demand would be less than the significance thresholds for potable and total water, respectively, the water demand impacts that are expected occur from implementing PAR 1469 would be less than significant. Further, existing water supplies are expected to be sufficiently available to serve the proposed project from existing entitlements and resources without the need for new or expanded entitlements because the projected increased water demand is based on a peak day, but that amount of water will not be needed every day. Therefore, PAR 1469 is not expected to have significant adverse water demand impacts.

Conclusion

Based upon these considerations, significant adverse hydrology and water quality impacts are not expected from implementing PAR 1469. Since no significant hydrology and water quality impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
X.	**LAND USE AND PLANNING.** Would the project:				
a)	Physically divide an established community?	☐	☐	☐	☑
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

Significance Criteria

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

X. a) No Impact. PAR 1469 does not require the construction of new facilities, and any physical effects that will result from PAR 1469, will occur at existing facilities located in industrial, commercial, or mixed use areas and would not be expected to go beyond existing boundaries. For this reason, implementation of PAR 1469 would not be expected to physically divide an established community. Therefore, no impacts are anticipated.

X. b) No Impact. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by PAR 1469. All construction and operation activities that are expected to occur as a result of complying with PAR 1469 will occur within the confines of the existing facilities and would not be expected to affect or conflict with any applicable land use plans, policies, or regulations. Further, no new development or alterations to existing land designations will occur as a result of the implementation of PAR 1469. Therefore, present or planned land uses in the region will not be affected as a result of implementing PAR 1469.

Conclusion

Based upon these considerations, significant adverse land use and planning impacts are not expected from implementing PAR 1469. Since no significant land use and planning impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XI.	**MINERAL RESOURCES.** Would the project:				
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b)	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☑

Significance Criteria

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XI. a) & b) No Impact. PAR 1469 would require the installation of new or the modification of existing APCDs, upgrades to building enclosures, and tank relocations. The construction and operation activities necessary to implement PAR 1469 would not require the use of a known mineral resource. Thus, there are no provisions in PAR 1469 that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state such as aggregate, coal, clay, shale, et cetera, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Conclusion

Based upon these considerations, significant adverse mineral resource impacts are not expected from implementing PAR 1469. Since no significant mineral resource impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XII. NOISE. Would the project result in:				
a) Exposure of persons to or generation of permanent noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☑	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑	☐
c) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐
d) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☑	☐

Significance Criteria

Noise impact will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XII. a), b), & c) Less than Significant Impact. The facilities affected by PAR 1469 are currently located in urbanized industrial, commercial, or mixed land use areas. The existing noise environment at each of the facilities is typically dominated by noise from existing equipment on-site, vehicular traffic around the facilities, and trucks entering and exiting facility premises. Large, potentially noise-intensive construction equipment would be needed temporarily during construction to install new or modify existing APCDs and to relocate tanks as part of implementation of PAR 1469. Operation of the construction equipment would be expected to comply with all existing noise control laws and ordinances. Since the facilities are located in industrial, commercial, or mixed land use areas, which have a higher background noise level when compared to other areas, the noise generated during construction will likely be indistinguishable from the background noise levels at the property line.

Once the construction is complete, the noise from the chromium electroplating and chromic acid anodizing activities currently being conducted outdoors will be located within the enclosures as required by PAR 1469. Thus, the existing noise profile from these activities is expected to be less than what is currently being generated on-site. Similarly, for any facility that installs new APCDs such as HEPA filters, substantial amounts of noise are not typically produced by these types of devices. Due to the attenuation rate of noise based on distance from the source, it is unlikely that noise levels exceeding local noise ordinances from operation new air pollution control equipment would occur beyond a facility's boundaries. Furthermore, OSHA and CAL-OSHA have established noise standards to protect worker health. Furthermore, compliance with local noise ordinances limiting the hours of construction will reduce the temporary noise impacts from construction to sensitive receptors. These potential noise increases are expected to be within the allowable noise levels established by the local noise ordinances for industrial areas, and thus are expected to be less than significant.

XII. d) Less than Significant Impact. As explained previously in Section VIII e), 17 of the affected facilities are located within two miles of an airport. However, the installation of APCDs, the upgrades of building enclosures, and the relocations of tanks are expected to be constructed in accordance with all appropriate building, land use and fire codes and any new installations or structures are expected to be well below the height relative to the elevation of existing flight patterns so as to not interfere with plane flight paths consistent with Federal Aviation Regulation, Part 77. However, compliance with PAR 1469 are not expected to expose people residing or working in the vicinity of those 17 facilities to the same degree of excessive noise levels associated with airplanes because all noise producing equipment at those 17 facilities, as well as at all the other affected facilities, must comply with local noise ordinances and applicable OSHA or CAL-OSHA workplace noise reduction requirements. Therefore, the impacts are expected to be less than significant.

Conclusion

Based upon these considerations, significant adverse noise impacts are not expected from the implementing PAR 1469. Since no significant noise impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING. Would the project:				
a) Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	☐	☐	☐	☑
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

Significance Criteria

Impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XIII. a) No Impact. The construction activities associated with PAR 1469 at the affected facilities are relatively minimal such that they would not be expected to require the relocation of individuals, require new housing or commercial facilities, or change the distribution of the population. On a peak day, the analysis assumes that up to 84~~72~~ workers may be needed to perform construction activities to comply with PAR 1469 at all 89 ~~98~~ affected facilities and these workers can be supplied from the existing labor pool in the local Southern California area. Further, the installation of new or the modification of existing APCDs would not be expected to require new employees to operate and maintain the equipment because several of the facilities already have existing APCDs in place with personnel trained to maintain the equipment. In the event that new employees are hired, the number of new employees hired at any one facility would likely be relatively small, perhaps no more than one or two per facility. The human population within the District is anticipated to grow regardless of implementing PAR 1469. As a result, PAR 1469 is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth in the District or population distribution.

XIII. b) No Impact. PAR 1469 regulates operations at existing chromium electroplating and chromic acid anodizing operations facilities and as previously explained in Section III – Air Quality, SCAQMD staff is not aware of any new chromium electroplating and chromic acid anodizing operations facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if any, would be built in the long-term. Thus, PAR 1469 is not expected to result in the creation of any industry that would affect population growth, directly or indirectly or cause the displacement of substantial numbers of people that would induce the construction of replacement housing elsewhere in the District.

Conclusion

Based upon these considerations, significant adverse population and housing impacts are not expected from implementing PAR 1469. Since no significant population and housing impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES. Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
a) Fire protection?	☐	☐	☐	☑
b) Police protection?	☐	☐	☐	☑
c) Schools?	☐	☐	☐	☑
d) Other public facilities?	☐	☐	☐	☑

Significance Criteria

Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XIV. a) & b) No Impact. Implementation of PAR 1469 is expected to cause facility owners or operators to install new or modify existing APCDs, to upgrade building enclosures and to relocate tanks, all the while continuing current operations at the existing affected facilities. New safety hazards are not expected to occur during construction because the construction activities would not involve the use or handling of hazardous materials. The metal PM to be captured by the APCDs, once they become operational, may be explosive in nature. Thus, the design of the APCDs will need to conform to the National Fire Protection Association standards which have special designations for deflagrations (e.g., explosion prevention) from metal dust. Additional information pertaining to these types of protective measures is available in Chapter 8 of the *Industrial Ventilation, A Manual for Recommended Practice for Design*, 28th Edition, published by the American Conference of Governmental Industrial Hygienists, ©2013.

The increased use of APCDs, housekeeping, best management practices, and APCD maintenance activities, or the temporary use of construction worker vehicles and trucks would not be expected to substantially alter or increase the need or demand for additional public services (e.g., fire and police departments and related emergency services, et cetera) above current levels, so no significant impact to these existing services is anticipated.

XIV. c) No Impact. As noted in Section XIII - Population and Housing, PAR 1469 is not expected to induce population growth in any way because the local labor pool (e.g., workforce) is expected to be sufficient to accommodate 84~~72~~ construction workers to perform any construction activities that may be necessary at affected facilities and operation of new or modified APCDs is not expected to require additional employees. In the event that new employees are hired, the number of new employees at any one facility would likely be small, no more than one or two per facility. Therefore, with no significant increase in local population, no impacts would be expected to local schools.

XIV. d) No Impact. PAR 1469 is expected to result in the installation and use of new or modified APCDs, upgrades to building enclosures, and the relocation of tanks. Besides obtaining building permits from the local agency and SCAQMD permits for installing APCDs, there will be no need for other types of government services because the affected facilities will continue their existing operations. Because PAR 1469 does not require any change in production rates that would in turn trigger the need for additional oversight by public facilities, PAR 1469 would not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives. As explained earlier, there will be no substantive increase in population as a result of implementing PAR 1469, and, therefore, no need for physically altered government facilities.

Conclusion

Based upon these considerations, significant adverse public services impacts are not expected from implementing PAR 1469. Since no significant public services impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment or recreational services?	☐	☐	☐	☑

Significance Criteria

Impacts to recreation will be considered significant if:

- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XV. a) & b) No Impact. As explained previously in Section XIII - Population and Housing, the owners or operators of the affected facilities who need to perform any construction activities to comply with PAR 1469 can draw from the existing labor pool in the local Southern California area. Further, the installation of new or the modification of existing APCDs would not be expected to require new employees to operate and maintain the equipment because several of the facilities already have existing APCDs in place with personnel trained to maintain the equipment. In the event that new employees are hired, the number of new employees hired at any one facility would likely be relatively small, perhaps no more than one or two per facility. The human population within the District is anticipated to grow regardless of implementing PAR 1469. As a result, PAR 1469 is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth in the District or population distribution. Further, there are no provisions in PAR 1469 that would affect or increase the demand for or use of existing neighborhood and regional parks or other recreational facilities. Further PAR 1469 would not require the construction of new or the expansion of existing recreational facilities that might, in turn, cause adverse physical effects on the environment because PAR 1469 will not directly or indirectly substantively increase or redistribute population.

Conclusion

Based upon these considerations, significant adverse recreation impacts are not expected from implementing PAR 1469. Since no significant recreation impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVI. SOLID AND HAZARDOUS WASTE. Would the project:				
a) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☑	☐
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	☐	☐	☐	☑

Significance Criteria

The proposed project impacts on solid and hazardous waste will be considered significant if the following occurs:

- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XVI. a) Less than Significant Impact. Landfills are permitted by the local enforcement agencies with concurrence from the California Department of Resources Recycling and Recovery (CalRecycle). Local agencies establish the maximum amount of solid waste which can be received by a landfill each day and the operational life of a landfill. This analysis of solid waste impacts assumes that safety and disposal procedures required by various agencies in California will provide reasonable precautions against the improper disposal of hazardous wastes in a municipal waste landfill. Because of state and federal requirements, some facilities are attempting to reduce or minimize the generation of solid and hazardous wastes by incorporating source reduction technologies to reduce the volume or toxicity of wastes generated, including improving operating procedures, using less hazardous or nonhazardous substitute materials, and upgrading or replacing inefficient processes.

PAR 1469 would require the installation of new or the modification of existing APCDs. In the worst case, the analysis assumes that 130 ~~145~~ APCDs will be installed in all 89 ~~98~~ affected facilities. While most of the APCDs are expected to be new installations, some existing APCDs will be modified or refurbished while others will be dismantled and completely replaced. Any scrap metal from these APCD installations, replacements, or modifications may have economic value such that it can recycled, instead of being sent to a landfill~~ed~~. As such, very minimal amounts of solid waste are expected to be generated during construction.

In addition, the operation of APCDs such as HEPA filters could generate solid waste from the collection of metal PM and from the replacement of torn bags and spent filters in HEPA systems. Mixed metal compounds could be captured with the use of filtration controls at a 99.9 percent control rate. Currently, the affected facilities send their waste metal materials for recycling or disposal at a hazardous waste landfill. Based on the number of APCDs that may be needed at the affected facilities, the analysis shows that spent filters, torn bags, and waste collected by the APCDs (HEPA filters) may generate up to 27,733 ~~30,933~~ cubic yards per year of hazardous waste. The estimated solid waste from these activities is summarized in Table 2-13.

Table 2-13
Total Solid Waste Generation[22]

Control Type	Potential Number of Affected Units	Total Waste Generated Per Year (cubic yards)
Disposal of Torn Bags and Spent Filters	130 ~~145~~ (103 ~~118~~+27)	640 (each) 27,733 ~~30,933~~ (total, worst-case, per year)

Note: This analysis assumes that each APCD will need filter replacement every 3 years and will generate 640 cubic yards of filters, fabrics, metals, and the other total solid waste.

The nearest RCRA landfills to all 89 facilities are Republic Services and US Ecology ~~from all 98 facilities.~~ The Republic Services La Paz County Landfill has approximately 20,000,000 cubic yards of capacity remaining for its~~the~~ 50 year life expectancy (400,000 cubic yards per year). The US Ecology, Inc., facility in Beatty, Nevada has approximately 638,858 cubic yards of capacity remaining for its~~the~~ three year life expectancy (212,952 cubic yards per year). ~~US Ecology, Inc., currently receives approximately 18,000 cubic yards per year of waste, so 194,952 cubic yards per year (212,952 cubic yards per year – 18,000 cubic yards per year) would be available should any of the affected facilities elect to dispose of their hazardous materials at this facility.~~

With a disposal of 27,733~~30,933~~ cubic yards per year of filters, fabrics, and metals, the total solid and hazardous waste impacts from PAR 1469 are conservatively estimated at 8 percent and 14 percent of the available Republic Services and US Ecology landfill capacity, respectively. Thus, the amount of hazardous waste that may be generated by the proposed project is relatively small, would not be considered to create a significant demand on existing landfill capacity, and would not likely require new RCRA landfills to be built.

[22] Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the total solid waste generation. Even with the revised number of potential affected units, the analysis demonstrates that no significant adverse solid waste generation impacts would be expected to occur.

For example, US Ecology, Inc., currently receives approximately 18,000 cubic yards per year of waste, so 194,952 cubic yards per year (212,952 cubic yards per year – 18,000 cubic yards per year) would be available should any of the affected facilities elect to dispose of their hazardous materials at this facility.

Finally, all new APCDs are expected to be installed within the currently developed footprint at existing facilities. Because the newly installed APCDs will have a finite lifetime (approximately 20 years), each unit will ultimately have to be replaced at the end of its useful life. The APCDs may be refurbished and used elsewhere or the scrap metal or other materials from any replaced units would be expected to be recycled due to its economic value. For these reasons, any solid or hazardous waste impacts specifically associated with implementing the proposed project are expected to be minor. As a result, no substantial change in the amount or character of solid or hazardous waste streams is expected to occur.

Because the waste disposal needs from implementing PAR 1469 are expected to be served by existing landfills with sufficient permitted capacity to accommodate each affected facility's solid waste disposal needs, potential solid and hazardous waste impacts from implementing PAR 1469 would not be significant.

XVI. b) No Impact. It is assumed that facility operators at the facilities currently comply with all applicable local, state, or federal waste disposal regulations and PAR 1469 does not contain any provisions that would alter current practices. Thus, implementation of PAR 1469 is not expected to interfere with any affected facility's ability to comply with applicable local, state, or federal waste disposal regulations in a manner that would cause a significant adverse solid and hazardous waste impact.

Conclusion

Based upon these considerations, significant adverse solid and hazardous waste impacts are not expected from implementing PAR 1469. Since no significant solid and hazardous waste impacts were identified, no mitigation measures are necessary or required.

Subsequent to the release of the Draft EA for public review and comment, modifications were made to PAR 1469 that caused some of the calculations in this section to be revised. Staff has reviewed the modifications to PAR 1469 and the revised calculations and concluded that none of the revisions constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the Draft EA. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION AND TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☑	☐
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☑	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☑
d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☐	☑
e) Result in inadequate emergency access?	☐	☐	☐	☑
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☑

Significance Criteria

Impacts on transportation and traffic will be considered significant if any of the following criteria apply:

- Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.
- An intersection's volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- The project conflicts with applicable policies, plans or programs establishing measures of effectiveness, thereby decreasing the performance or safety of any mode of transportation.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.
- The need for more than 350 employees.
- An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day.
- Increase customer traffic by more than 700 visits per day.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium~~-containing~~ tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XVII. a) & b) Less Than Significant Impact

Construction

As previously discussed in Section III - Air Quality and Greenhouse Gas Emissions, compliance with PAR 1469 may require construction activities associated with installing APCDs, upgrading building enclosures, and relocating tanks. Approximately 70~~60~~ construction worker trips (round trips) and 14~~12~~ vendor truck trips (round trips) for a total of 84~~72~~ construction round trips are assumed to be needed on a peak construction day for 12 APCD and two PTE installations with overlapping construction schedules. Thus, construction is not expected to affect on-site traffic or parking for each affected facility. Further, since the additional 84~~72~~ construction round trips that may occur on a peak day are well below the significant threshold of 350 round trips, regional traffic and transportation impacts during construction are not expected to cause a significance adverse impact. The estimated vehicle trips from all activities on the peak day during construction are summarized in Table 2-14.

Operation

APCDs that are installed to comply with PAR 1469 will collect toxic PM waste products from chromium electroplating and chromic acid anodizing activities, as well as dry solids from spent filters and torn bags. These solid waste materials will need to be transported off-site from each facility to either disposal or recycling facilities. In addition, fresh filters will need to replace the spent filters and these will need to be delivered to each facility. Similarly, fresh bags will be needed to replace torn bags and these will also need to be delivered to each facility as needed. Finally, since all of the affected facilities will be required to conduct source tests to comply with PAR 1469, workers needed to conduct the source tests will also generate trips. All of the trips needed to haul wastes and deliver supplies as well as conduct source tests will contribute to operational traffic and transportation impacts.

For a worst-case analysis, SCAQMD staff assumed that four facilities on a peak day would generate a maximum of four additional vehicle trips (round trips) to account for worker trips needed to conduct source testing and four additional truck trips (round trips) during operation to haul away collected waste, and to inspect, replace and dispose of filters. While these vehicle and truck trips are assumed to overlap on a given day, the eight round trips that may occur are not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near each of the affected facilities. In fact, this low volume of additional daily vehicle traffic is negligible over the entire District. Further, as previously explained in Section XII – Population and Housing, the installation of new or the modification of existing APCDs would not be expected to require new, additional permanent employees to operate and maintain the equipment because many of the facilities already have existing APCDs in place with personnel trained to maintain the equipment. In the event that new employees are hired, it is expected that the number of new employees hired at any one facility would be relatively small, perhaps no more than one or two per facility. Thus, even for the trips that would be associated with employing a small number ~~amount~~ of new workers at each affected facility, implementation of PAR 1469 is not expected to cause a significant increase in the number of worker trips during operation at any of the affected facilities. The estimated vehicles from all activities is summarized in Table 2-14.

Table 2-14
Estimation of Vehicle Trips (Round Trips)[23]

Phase	Worker Vehicles	Vendor Trucks
Construction [a]	70~~60~~ per day	14~~12~~ per day
Operation	Up to 4 additional vehicles (LDA) for source test and 4 additional APCD maintenance truck (MDV) from all 89 ~~98~~ affected facilities per day[b]	

[a] The worst-case analysis for construction is based on a maximum of 5 worker vehicles plus 1 vendor trucks per day for 12 APCD and 2 PTE installations during a peak day to account for overlapping construction.
[b] The worst-case analysis during operation is based on a maximum of 4 additional source testing vehicles and 4 additional APCD maintenance truck to do filter/bag replacement or inspection, and disposal at 89 ~~98~~ affected facilities.

XVII. c) No Impact. As explained previously in Section VIII – Hazards and Hazardous Materials, 17 of the affected facilities are located within two miles of an airport. However, the installation of the APCDs, the upgrades of building enclosures, and the relocation of tanks are expected to be conducted in accordance with all appropriate building, land use and fire codes and any new installations or structures are expected to be well below the height relative to the elevation of existing flight patterns so as to not interfere with plane flight paths consistent with f~~F~~ederal a~~A~~viation r~~R~~egulations, Title 14 CFR Part 77. Thus, compliance with PAR 1469 would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risk.

XVII. d) & e) No Impact. PAR 1469 does not involve or require the construction of new roadways because the focus of PAR 1469 is reducing hexavalent chromium emissions from chromium electroplating and chromic acid anodizing facilities. Thus, there will be no change to current public roadway designs that could increase traffic hazards. Further, PAR 1469 is not expected to substantially increase traffic hazards or create incompatible uses at or adjacent to the facilities. Emergency access at each of the affected facilities is not expected to be impacted because PAR 1469 does not contain any requirements specific to emergency access points and each affected facility is expected to continue to maintain their existing emergency access. Further, the building enclosure upgrade requirements in PAR 1469 do not contain any specifications relative to any facility's emergency access. In addition, in order to build the PTEs ~~total enclosures~~, the facility would likely need to get approvals from the local land use authority and that's when they would check for emergency access. PAR 1469 does not include provisions which would conflict with emergency access. Since PAR 1469 is expected to involve short-term construction activities that would create new, minor delivery/haul truck trips that would be expected to cease after construction is completed, the proposed project is not expected to alter the existing long-term circulation patterns within the areas of each affected facility during construction. Similarly, during operation, the projected increase of additional vehicle trips that may be needed at each affected facility would be at less than significant levels individually and cumulatively such that implementation of the proposed project is not expected to require a modification to circulation. Thus, no long-term impacts on the traffic circulation system are expected to occur during construction or operation.

[23] Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the total number of affected facilities. Even with the revised number of potential affected facilities, the analysis demonstrates that no significant adverse transportation and traffic impacts would be expected to occur.

XVII. f) No Impact. PAR 1469 does not contain any requirements that would affect or alter adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Further, the facilities would still be expected to comply with, and not interfere with adopted policies, plans, or programs supporting alternative transportation (e.g., bicycles or buses) that exist in their respective cities. Since all of the requirements and compliance activities associated with implementing PAR 1469 would be expected to occur on-site, PAR 1469 would have no impact on each facility's ability to comply with any applicable alternative transportation plans or policies.

Conclusion

Based upon these considerations, significant adverse transportation and traffic impacts are not expected from implementing PAR 1469. Since no significant transportation and traffic impacts were identified, no mitigation measures are necessary or required.

Subsequent to the release of the Draft EA for public review and comment, modifications were made to PAR 1469 that caused some of the calculations in this section to be revised. Staff has reviewed the modifications to PAR 1469 and the revised calculations and concluded that none of the revisions constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the Draft EA. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☑
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).	☐	☐	☑	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

Discussion

XVIII. a) No Impact. As explained in Section IV - Biological Resources, PAR 1469 is not expected to significantly adversely affect plant or animal species or the habitat on which they rely because any construction and operational activities associated with the facilities are expected to occur entirely within the boundaries of existing developed facilities in areas that have been greatly disturbed and that currently do not support any species of concern or the habitat on which they rely. For these reasons, PAR 1469 is not expected to reduce or eliminate any plant or animal species or destroy prehistoric records of the past.

XVIII. b) Less Than Significant Impact. Based on the foregoing analyses, PAR 1469 would not result in significant adverse project-specific environmental impacts. Potential adverse impacts from implementing PAR 1469 would not be “cumulatively considerable” as defined by CEQA Guidelines Section 15064(h)(1) for any environmental topic because there are no, or only minor incremental project-specific impacts that were concluded to be less than significant. Per CEQA

Guidelines Section 15064(h)(4), the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulative considerable. SCAQMD cumulative significant thresholds are the same as project-specific significance thresholds.

This approach was upheld by the court in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334. The Court determined that where it can be found that a project did not exceed the SCAQMD's established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in a cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines §15064.7, stating, "The lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect." The court found that, "Although the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria…". "Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact."~~ As in *Chula Vista* and *Rialto Citizens for Responsible Growth*, here the SCAQMD has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established SCAQMD significance thresholds. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899.~~ In *Rialto Citizens for Responsible Growth*, the court upheld the SCAQMD's approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899. As in *Chula Vista* and *Rialto Citizens for Responsible Growth*, here the SCAQMD has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established SCAQMD significance thresholds. Thus, the implementation of PAR 1469 will not cause a significant unavoidable cumulative impact.

Therefore, there is no potential for significant adverse cumulative or cumulatively considerable impacts to be generated by PAR 1469 for any environmental topic.

XVIII. c) Less Than Significant Impact. Based on the foregoing analyses, PAR 1469 is not expected to cause adverse effects on human beings for any environmental topic, either directly or indirectly because: 1) the air quality and GHG impacts were determined to be less than the significance thresholds as analyzed in Section III – Air Quality and Greenhouse Gases; 2) the increased demand for energy, water, and solid waste disposal, can be met by utilizing existing services as analyzed in Section VI - Energy, Section IX - Hydrology and Water Quality, and Section XVI – Solid and Hazardous Waste; 3) the hazards and hazardous materials impacts were determined to be less than significant as analyzed in Section VIII – Hazards and Hazardous Materials; 4) the noise impacts were determined to be less than significant as analyzed in Section XII – Noise; and, 5) the transportation and traffic impacts were determined to be less than the significance thresholds as analyzed in Section XVI – Transportation and Traffic. In addition, the analysis concluded that there would be no significant environmental impacts for the remaining environmental impact topic areas: aesthetics, agriculture and forestry resources, biological resources, cultural resources, geology and soils, land use and planning, mineral resources, public services, population and housing, and recreation.

Conclusion

As previously discussed in environmental topics I through XVIII, the proposed project has no potential to cause significant adverse environmental effects. Therefore, no mitigation measures are necessary or required.

APPENDICES

Appendix A: Proposed Amended Rule 1469 – Hexavalent Chromium Emissions From Chromium Electroplating And Chromic Acid Anodizing Operations

Appendix B: CalEEMod Files and Assumptions

Appendix C: CEQA Impact Evaluations – Assumptions and Calculations

Appendix D: PAR 1469 List of Affected Facilities

<u>Appendix E: Comment Letters Received on the Draft EA and Responses to Comments</u>

APPENDIX A

Proposed Amended Rule 1469 – Hexavalent Chromium Emissions From Chromium Electroplating And Chromic Acid Anodizing Operations

In order to save space and avoid repetition, please refer to the latest version of Proposed Amended Rule 1469 located elsewhere in the Governing Board Package. The version of Proposed Amended Rule 1469 that was circulated with the Draft EA and released on February 16, 2018 for a 32-day public review and comment period ending on March 20, 2018 was identified as "Preliminary Draft Rule Language – January 19, 2018".

Original hard copies of the Draft EA, which include the draft version of the proposed amended rule listed above, can be obtained through the SCAQMD Public Information Center at the Diamond Bar headquarters or by contacting Fabian Wesson, Public Advisor at the SCAQMD's Public Information Center by phone at (909) 396-2039 or by email at PICrequests@aqmd.gov.

APPENDIX B

CalEEMod Files And Assumptions

APPENDIX B

CalEEMod Files And Assumptions

- **1 tank relocation (annual run)**

PAR1469_construction tank relocation

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 project

Construction Phase - 1 tank relocation (1 welder, 1 forklift)

Off-road Equipment - 1 tank relocation (1 welder, 1 forklift)

Trips and VMT - each tank relocation needs 5 worker vehicles and 1 vendor vehicle

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	MHDT
tblTripsAndVMT	WorkerTripNumber	0.00	10.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	9.3000e-004	4.5300e-003	5.1700e-003	1.0000e-005	3.1000e-004	3.1000e-004	6.2000e-004	8.0000e-005	2.9000e-004	3.8000e-004	0.0000	0.7555	0.7555	1.1000e-004	0.0000	0.7583
Maximum	**9.3000e-004**	**4.5300e-003**	**5.1700e-003**	**1.0000e-005**	**3.1000e-004**	**3.1000e-004**	**6.2000e-004**	**8.0000e-005**	**2.9000e-004**	**3.8000e-004**	**0.0000**	**0.7555**	**0.7555**	**1.1000e-004**	**0.0000**	**0.7583**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	9.3000e-004	4.5300e-003	5.1700e-003	1.0000e-005	3.1000e-004	3.1000e-004	6.2000e-004	8.0000e-005	2.9000e-004	3.8000e-004	0.0000	0.7555	0.7555	1.1000e-004	0.0000	0.7583
Maximum	**9.3000e-004**	**4.5300e-003**	**5.1700e-003**	**1.0000e-005**	**3.1000e-004**	**3.1000e-004**	**6.2000e-004**	**8.0000e-005**	**2.9000e-004**	**3.8000e-004**	**0.0000**	**0.7555**	**0.7555**	**1.1000e-004**	**0.0000**	**0.7583**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**2-14-2018**	**5-13-2018**	0.0039	0.0039
		Highest	0.0039	0.0039

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	4/2/2018	4/6/2018	5	5	APCD installation

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	0	4.00	63	0.31
Building Construction	Air Compressors	0	4.00	78	0.48
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	1	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	1	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	2	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	MHDT	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7000e-004	4.0700e-003	3.8400e-003	1.0000e-005		3.0000e-004	3.0000e-004		2.9000e-004	2.9000e-004	0.0000	0.4097	0.4097	1.0000e-004	0.0000	0.4122
Total	**7.7000e-004**	**4.0700e-003**	**3.8400e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**2.9000e-004**	**2.9000e-004**	**0.0000**	**0.4097**	**0.4097**	**1.0000e-004**	**0.0000**	**0.4122**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	3.5000e-004	1.7000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.0827	0.0827	0.0000	0.0000	0.0828
Worker	1.3000e-004	1.1000e-004	1.1700e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2631	0.2631	1.0000e-005	0.0000	0.2634
Total	**1.5000e-004**	**4.6000e-004**	**1.3400e-003**	**0.0000**	**3.0000e-004**	**1.0000e-005**	**3.2000e-004**	**8.0000e-005**	**1.0000e-005**	**9.0000e-005**	**0.0000**	**0.3459**	**0.3459**	**1.0000e-005**	**0.0000**	**0.3461**

3.2 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7000e-004	4.0700e-003	3.8400e-003	1.0000e-005		3.0000e-004	3.0000e-004		2.9000e-004	2.9000e-004	0.0000	0.4097	0.4097	1.0000e-004	0.0000	0.4122
Total	**7.7000e-004**	**4.0700e-003**	**3.8400e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**2.9000e-004**	**2.9000e-004**	**0.0000**	**0.4097**	**0.4097**	**1.0000e-004**	**0.0000**	**0.4122**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	3.5000e-004	1.7000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.0827	0.0827	0.0000	0.0000	0.0828
Worker	1.3000e-004	1.1000e-004	1.1700e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2631	0.2631	1.0000e-005	0.0000	0.2634
Total	**1.5000e-004**	**4.6000e-004**	**1.3400e-003**	**0.0000**	**3.0000e-004**	**1.0000e-005**	**3.2000e-004**	**8.0000e-005**	**1.0000e-005**	**9.0000e-005**	**0.0000**	**0.3459**	**0.3459**	**1.0000e-005**	**0.0000**	**0.3461**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

CalEEMod Files And Assumptions

- **1 tank relocation (Summer run)**

PAR1469_construction tank relocation

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 project

Construction Phase - 1 tank relocation (1 welder, 1 forklift)

Off-road Equipment - 1 tank relocation (1 welder, 1 forklift)

Trips and VMT - each tank relocation needs 5 worker vehicles and 1 vendor vehicle

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	MHDT
tblTripsAndVMT	WorkerTripNumber	0.00	10.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.3722	1.8022	2.1015	3.6200e-003	0.1253	0.1231	0.2484	0.0337	0.1179	0.1516	0.0000	339.0885	339.0885	0.0488	0.0000	340.3073
Maximum	**0.3722**	**1.8022**	**2.1015**	**3.6200e-003**	**0.1253**	**0.1231**	**0.2484**	**0.0337**	**0.1179**	**0.1516**	**0.0000**	**339.0885**	**339.0885**	**0.0488**	**0.0000**	**340.3073**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.3722	1.8022	2.1015	3.6200e-003	0.1253	0.1231	0.2484	0.0337	0.1179	0.1516	0.0000	339.0885	339.0885	0.0488	0.0000	340.3073
Maximum	**0.3722**	**1.8022**	**2.1015**	**3.6200e-003**	**0.1253**	**0.1231**	**0.2484**	**0.0337**	**0.1179**	**0.1516**	**0.0000**	**339.0885**	**339.0885**	**0.0488**	**0.0000**	**340.3073**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	4/2/2018	4/6/2018	5	5	APCD installation

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	0	4.00	63	0.31
Building Construction	Air Compressors	0	4.00	78	0.48
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	1	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	1	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	2	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	MHDT	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3100	1.6282	1.5351	2.0400e-003		0.1196	0.1196		0.1146	0.1146		180.6327	180.6327	0.0438		181.7285
Total	**0.3100**	**1.6282**	**1.5351**	**2.0400e-003**		**0.1196**	**0.1196**		**0.1146**	**0.1146**		**180.6327**	**180.6327**	**0.0438**		**181.7285**

3.2 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.3400e-003	0.1354	0.0647	3.5000e-004	0.0135	2.6300e-003	0.0162	4.0600e-003	2.5200e-003	6.5700e-003		36.5206	36.5206	7.6000e-004		36.5396
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.0622**	**0.1740**	**0.5664**	**1.5800e-003**	**0.1253**	**3.5200e-003**	**0.1288**	**0.0337**	**3.3400e-003**	**0.0370**		**158.4558**	**158.4558**	**4.9200e-003**		**158.5787**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3100	1.6282	1.5351	2.0400e-003		0.1196	0.1196		0.1146	0.1146	0.0000	180.6327	180.6327	0.0438		181.7285
Total	**0.3100**	**1.6282**	**1.5351**	**2.0400e-003**		**0.1196**	**0.1196**		**0.1146**	**0.1146**	**0.0000**	**180.6327**	**180.6327**	**0.0438**		**181.7285**

3.2 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.3400e-003	0.1354	0.0647	3.5000e-004	0.0135	2.6300e-003	0.0162	4.0600e-003	2.5200e-003	6.5700e-003		36.5206	36.5206	7.6000e-004		36.5396
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	**0.0622**	**0.1740**	**0.5664**	**1.5800e-003**	**0.1253**	**3.5200e-003**	**0.1288**	**0.0337**	**3.3400e-003**	**0.0370**		**158.4558**	**158.4558**	**4.9200e-003**		**158.5787**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

CalEEMod Files And Assumptions

- **1 tank relocation (Winter run)**

PAR1469_construction tank relocation

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 project

Construction Phase - 1 tank relocation (1 welder, 1 forklift)

Off-road Equipment - 1 tank relocation (1 welder, 1 forklift)

Trips and VMT - each tank relocation needs 5 worker vehicles and 1 vendor vehicle

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	MHDT
tblTripsAndVMT	WorkerTripNumber	0.00	10.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.3771	1.8094	2.0572	3.5400e-003	0.1253	0.1231	0.2484	0.0337	0.1179	0.1516	0.0000	331.1344	331.1344	0.0485	0.0000	332.3470
Maximum	**0.3771**	**1.8094**	**2.0572**	**3.5400e-003**	**0.1253**	**0.1231**	**0.2484**	**0.0337**	**0.1179**	**0.1516**	**0.0000**	**331.1344**	**331.1344**	**0.0485**	**0.0000**	**332.3470**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.3771	1.8094	2.0572	3.5400e-003	0.1253	0.1231	0.2484	0.0337	0.1179	0.1516	0.0000	331.1344	331.1344	0.0485	0.0000	332.3470
Maximum	**0.3771**	**1.8094**	**2.0572**	**3.5400e-003**	**0.1253**	**0.1231**	**0.2484**	**0.0337**	**0.1179**	**0.1516**	**0.0000**	**331.1344**	**331.1344**	**0.0485**	**0.0000**	**332.3470**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	4/2/2018	4/6/2018	5	5	APCD installation

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	0	4.00	63	0.31
Building Construction	Air Compressors	0	4.00	78	0.48
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	1	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	1	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	2	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	MHDT	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3100	1.6282	1.5351	2.0400e-003		0.1196	0.1196		0.1146	0.1146		180.6327	180.6327	0.0438		181.7285
Total	**0.3100**	**1.6282**	**1.5351**	**2.0400e-003**		**0.1196**	**0.1196**		**0.1146**	**0.1146**		**180.6327**	**180.6327**	**0.0438**		**181.7285**

3.2 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.5700e-003	0.1388	0.0680	3.5000e-004	0.0135	2.6400e-003	0.0162	4.0600e-003	2.5200e-003	6.5800e-003		36.4338	36.4338	7.8000e-004		36.4533
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.0672**	**0.1812**	**0.5221**	**1.5000e-003**	**0.1253**	**3.5300e-003**	**0.1288**	**0.0337**	**3.3400e-003**	**0.0370**		**150.5017**	**150.5017**	**4.6700e-003**		**150.6185**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3100	1.6282	1.5351	2.0400e-003		0.1196	0.1196		0.1146	0.1146	0.0000	180.6327	180.6327	0.0438		181.7285
Total	**0.3100**	**1.6282**	**1.5351**	**2.0400e-003**		**0.1196**	**0.1196**		**0.1146**	**0.1146**	**0.0000**	**180.6327**	**180.6327**	**0.0438**		**181.7285**

3.2 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.5700e-003	0.1388	0.0680	3.5000e-004	0.0135	2.6400e-003	0.0162	4.0600e-003	2.5200e-003	6.5800e-003		36.4338	36.4338	7.8000e-004		36.4533
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	**0.0672**	**0.1812**	**0.5221**	**1.5000e-003**	**0.1253**	**3.5300e-003**	**0.1288**	**0.0337**	**3.3400e-003**	**0.0370**		**150.5017**	**150.5017**	**4.6700e-003**		**150.6185**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

CalEEMod Files And Assumptions

- **APCD installation (annual run)**

PAR1469_20180126_construction

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 project

Construction Phase - worst-case construction day: 12 APCDs installation (each has 1 air compressor, 1 welder, 1 forklift, 1 aerial lift)

Off-road Equipment - worst-case construction day: 12 APCDs installation (each has 1 air compressor, 1 welder, 1 forklift, 1 aerial lift)

Trips and VMT - each APCD installation needs 5 worker vehicles and 1 vendor vehicle

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	24.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	MHDT
tblTripsAndVMT	WorkerTripNumber	0.00	120.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.0178	0.1052	0.1155	1.9000e-004	3.6900e-003	7.0000e-003	0.0107	9.9000e-004	6.8200e-003	7.8100e-003	0.0000	16.4719	16.4719	2.5200e-003	0.0000	16.5350
Maximum	**0.0178**	**0.1052**	**0.1155**	**1.9000e-004**	**3.6900e-003**	**7.0000e-003**	**0.0107**	**9.9000e-004**	**6.8200e-003**	**7.8100e-003**	**0.0000**	**16.4719**	**16.4719**	**2.5200e-003**	**0.0000**	**16.5350**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.0178	0.1052	0.1155	1.9000e-004	3.6900e-003	7.0000e-003	0.0107	9.9000e-004	6.8200e-003	7.8100e-003	0.0000	16.4719	16.4719	2.5200e-003	0.0000	16.5350
Maximum	**0.0178**	**0.1052**	**0.1155**	**1.9000e-004**	**3.6900e-003**	**7.0000e-003**	**0.0107**	**9.9000e-004**	**6.8200e-003**	**7.8100e-003**	**0.0000**	**16.4719**	**16.4719**	**2.5200e-003**	**0.0000**	**16.5350**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**2-14-2018**	**5-13-2018**	0.0876	0.0876
		Highest	0.0876	0.0876

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	4/2/2018	4/6/2018	5	5	APCD installation

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	12	4.00	63	0.31
Building Construction	Air Compressors	12	4.00	78	0.48
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	12	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	12	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	48	120.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	MHDT	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0159	0.0996	0.0995	1.5000e-004		6.8900e-003	6.8900e-003		6.7200e-003	6.7200e-003	0.0000	12.3215	12.3215	2.3900e-003	0.0000	12.3813
Total	**0.0159**	**0.0996**	**0.0995**	**1.5000e-004**		**6.8900e-003**	**6.8900e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**12.3215**	**12.3215**	**2.3900e-003**	**0.0000**	**12.3813**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5000e-004	4.2200e-003	2.0100e-003	1.0000e-005	4.0000e-004	8.0000e-005	4.8000e-004	1.2000e-004	8.0000e-005	2.0000e-004	0.0000	0.9929	0.9929	2.0000e-005	0.0000	0.9935
Worker	1.5900e-003	1.3000e-003	0.0140	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.1575	3.1575	1.1000e-004	0.0000	3.1602
Total	**1.8400e-003**	**5.5200e-003**	**0.0160**	**4.0000e-005**	**3.6900e-003**	**1.1000e-004**	**3.8000e-003**	**9.9000e-004**	**1.0000e-004**	**1.1000e-003**	**0.0000**	**4.1505**	**4.1505**	**1.3000e-004**	**0.0000**	**4.1537**

3.2 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0159	0.0996	0.0995	1.5000e-004		6.8900e-003	6.8900e-003		6.7200e-003	6.7200e-003	0.0000	12.3215	12.3215	2.3900e-003	0.0000	12.3813
Total	**0.0159**	**0.0996**	**0.0995**	**1.5000e-004**		**6.8900e-003**	**6.8900e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**12.3215**	**12.3215**	**2.3900e-003**	**0.0000**	**12.3813**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5000e-004	4.2200e-003	2.0100e-003	1.0000e-005	4.0000e-004	8.0000e-005	4.8000e-004	1.2000e-004	8.0000e-005	2.0000e-004	0.0000	0.9929	0.9929	2.0000e-005	0.0000	0.9935
Worker	1.5900e-003	1.3000e-003	0.0140	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.1575	3.1575	1.1000e-004	0.0000	3.1602
Total	**1.8400e-003**	**5.5200e-003**	**0.0160**	**4.0000e-005**	**3.6900e-003**	**1.1000e-004**	**3.8000e-003**	**9.9000e-004**	**1.0000e-004**	**1.1000e-003**	**0.0000**	**4.1505**	**4.1505**	**1.3000e-004**	**0.0000**	**4.1537**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

CalEEMod Files And Assumptions

- **APCD installation (Summer run)**

PAR1469_20180126_construction

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 project

Construction Phase - worst-case construction day: 12 APCDs installation (each has 1 air compressor, 1 welder, 1 forklift, 1 aerial lift)

Off-road Equipment - worst-case construction day: 12 APCDs installation (each has 1 air compressor, 1 welder, 1 forklift, 1 aerial lift)

Trips and VMT - each APCD installation needs 5 worker vehicles and 1 vendor vehicle

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	24.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	MHDT
tblTripsAndVMT	WorkerTripNumber	0.00	120.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	7.1071	41.9374	46.5971	0.0773	1.5035	2.7998	4.3033	0.4044	2.7278	3.1322	0.0000	7,334.3135	7,334.3135	1.1146	0.0000	7,362.1771
Maximum	**7.1071**	**41.9374**	**46.5971**	**0.0773**	**1.5035**	**2.7998**	**4.3033**	**0.4044**	**2.7278**	**3.1322**	**0.0000**	**7,334.3135**	**7,334.3135**	**1.1146**	**0.0000**	**7,362.1771**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	7.1071	41.9374	46.5971	0.0773	1.5035	2.7998	4.3033	0.4044	2.7278	3.1322	0.0000	7,334.3134	7,334.3134	1.1146	0.0000	7,362.1771
Maximum	**7.1071**	**41.9374**	**46.5971**	**0.0773**	**1.5035**	**2.7998**	**4.3033**	**0.4044**	**2.7278**	**3.1322**	**0.0000**	**7,334.3134**	**7,334.3134**	**1.1146**	**0.0000**	**7,362.1771**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	4/2/2018	4/6/2018	5	5	APCD installation

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	12	4.00	63	0.31
Building Construction	Air Compressors	12	4.00	78	0.48
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	12	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	12	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	48	120.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	MHDT	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.3604	39.8495	39.8001	0.0584		2.7575	2.7575		2.6878	2.6878		5,432.8440	5,432.8440	1.0555		5,459.2324
Total	**6.3604**	**39.8495**	**39.8001**	**0.0584**		**2.7575**	**2.7575**		**2.6878**	**2.6878**		**5,432.8440**	**5,432.8440**	**1.0555**		**5,459.2324**

3.2 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1001	1.6243	0.7759	4.2200e-003	0.1622	0.0316	0.1938	0.0487	0.0302	0.0789		438.2475	438.2475	9.1200e-003		438.4755
Worker	0.6466	0.4636	6.0211	0.0147	1.3413	0.0107	1.3520	0.3557	9.8600e-003	0.3656		1,463.2220	1,463.2220	0.0499		1,464.4693
Total	**0.7467**	**2.0879**	**6.7970**	**0.0189**	**1.5035**	**0.0423**	**1.5458**	**0.4044**	**0.0401**	**0.4445**		**1,901.4695**	**1,901.4695**	**0.0590**		**1,902.9448**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.3604	39.8495	39.8001	0.0584		2.7575	2.7575		2.6878	2.6878	0.0000	5,432.8439	5,432.8439	1.0555		5,459.2324
Total	**6.3604**	**39.8495**	**39.8001**	**0.0584**		**2.7575**	**2.7575**		**2.6878**	**2.6878**	**0.0000**	**5,432.8439**	**5,432.8439**	**1.0555**		**5,459.2324**

3.2 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1001	1.6243	0.7759	4.2200e-003	0.1622	0.0316	0.1938	0.0487	0.0302	0.0789		438.2475	438.2475	9.1200e-003		438.4755
Worker	0.6466	0.4636	6.0211	0.0147	1.3413	0.0107	1.3520	0.3557	9.8600e-003	0.3656		1,463.2220	1,463.2220	0.0499		1,464.4693
Total	**0.7467**	**2.0879**	**6.7970**	**0.0189**	**1.5035**	**0.0423**	**1.5458**	**0.4044**	**0.0401**	**0.4445**		**1,901.4695**	**1,901.4695**	**0.0590**		**1,902.9448**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

<u>Unmitigated</u>

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

CalEEMod Files And Assumptions

- **APCD installation (Winter run)**

PAR1469_20180126_construction

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 project

Construction Phase - worst-case construction day: 12 APCDs installation (each has 1 air compressor, 1 welder, 1 forklift, 1 aerial lift)

Off-road Equipment - worst-case construction day: 12 APCDs installation (each has 1 air compressor, 1 welder, 1 forklift, 1 aerial lift)

Trips and VMT - each APCD installation needs 5 worker vehicles and 1 vendor vehicle

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	24.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	MHDT
tblTripsAndVMT	WorkerTripNumber	0.00	120.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	7.1663	42.0234	46.0647	0.0763	1.5035	2.7999	4.3034	0.4044	2.7279	3.1323	0.0000	7,238.8642	7,238.8642	1.1116	0.0000	7,266.6543
Maximum	**7.1663**	**42.0234**	**46.0647**	**0.0763**	**1.5035**	**2.7999**	**4.3034**	**0.4044**	**2.7279**	**3.1323**	**0.0000**	**7,238.8642**	**7,238.8642**	**1.1116**	**0.0000**	**7,266.6543**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	7.1663	42.0234	46.0647	0.0763	1.5035	2.7999	4.3034	0.4044	2.7279	3.1323	0.0000	7,238.8642	7,238.8642	1.1116	0.0000	7,266.6543
Maximum	**7.1663**	**42.0234**	**46.0647**	**0.0763**	**1.5035**	**2.7999**	**4.3034**	**0.4044**	**2.7279**	**3.1323**	**0.0000**	**7,238.8642**	**7,238.8642**	**1.1116**	**0.0000**	**7,266.6543**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	4/2/2018	4/6/2018	5	5	APCD installation

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	12	4.00	63	0.31
Building Construction	Air Compressors	12	4.00	78	0.48
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	12	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	12	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	48	120.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	MHDT	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.3604	39.8495	39.8001	0.0584		2.7575	2.7575		2.6878	2.6878		5,432.844 0	5,432.844 0	1.0555		5,459.232 4
Total	**6.3604**	**39.8495**	**39.8001**	**0.0584**		**2.7575**	**2.7575**		**2.6878**	**2.6878**		**5,432.844 0**	**5,432.844 0**	**1.0555**		**5,459.232 4**

3.2 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1028	1.6661	0.8155	4.2100e-003	0.1622	0.0317	0.1939	0.0487	0.0303	0.0790		437.2053	437.2053	9.3600e-003		437.4392
Worker	0.7030	0.5079	5.4491	0.0138	1.3413	0.0107	1.3520	0.3557	9.8600e-003	0.3656		1,368.8150	1,368.8150	0.0467		1,369.9828
Total	**0.8059**	**2.1739**	**6.2646**	**0.0180**	**1.5035**	**0.0424**	**1.5459**	**0.4044**	**0.0402**	**0.4446**		**1,806.0203**	**1,806.0203**	**0.0561**		**1,807.4220**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.3604	39.8495	39.8001	0.0584		2.7575	2.7575		2.6878	2.6878	0.0000	5,432.8439	5,432.8439	1.0555		5,459.2324
Total	**6.3604**	**39.8495**	**39.8001**	**0.0584**		**2.7575**	**2.7575**		**2.6878**	**2.6878**	**0.0000**	**5,432.8439**	**5,432.8439**	**1.0555**		**5,459.2324**

3.2 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1028	1.6661	0.8155	4.2100e-003	0.1622	0.0317	0.1939	0.0487	0.0303	0.0790		437.2053	437.2053	9.3600e-003		437.4392
Worker	0.7030	0.5079	5.4491	0.0138	1.3413	0.0107	1.3520	0.3557	9.8600e-003	0.3656		1,368.8150	1,368.8150	0.0467		1,369.9828
Total	**0.8059**	**2.1739**	**6.2646**	**0.0180**	**1.5035**	**0.0424**	**1.5459**	**0.4044**	**0.0402**	**0.4446**		**1,806.0203**	**1,806.0203**	**0.0561**		**1,807.4220**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C

CEQA Impact Evaluations – Assumptions and Calculations

Appendix C
CEQA Construction Impact Evaluations - Assumptions and Calculations
(2018/2/14 rev)

Criteria Pollutant Emissions Summary

PAR 1469 Requirement	VOC, lb/day	NOx, lb/day	CO, lb/day	SOX, lb/day	PM10, lb/day	PM2.5, lb/day
1 tank relocation (Summer)	0.37	1.80	2.10	0.004	0.25	0.15
1 tank relocation (Winter)	0.38	1.81	2.06	0.004	0.25	0.03
Peak Day - 3 tank relocation on the same day	1.13	5.43	6.30	0.01	0.75	0.45
12 APCD Installations (Summer)	7.11	41.94	46.60	0.08	4.30	3.13
12 APCD Installations (Winter)	7.17	42.02	46.06	0.08	4.30	3.13
Peak Day - 12 APCD Installations on the same day	7.17	42.02	46.60	0.08	4.30	3.13
Daily Peak Construction Emissions	7.17	42.02	46.60	0.08	4.30	3.13
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75.00	100.00	550.00	150.00	150.00	55.00

Note:

1. The emissions are estimated using CalEEMod.
2. Tank relocation is expected to occur in the first 90 days after the rule is adopted. It is conservatively assumed in the peak day, there will be 3 tank relocation work among PAR1469 affected facilities.
3. APCD installation is expected to occur 1 year after the rule is adopted and therefore it has no overlap with tank relocation work. It is conservatively assumed in the peak day, there will be 12 APCD installtion work among PAR1469 affected facilities.

GHG Emissions Summary

PAR 1469 Requirement	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr		
1 tank relocation	0.76	1.10E-04	-	0.76		
6 tank relocation	4.53	0.00	-	4.55		
12 APCD Installations	16.47	2.52E-03	-	16.54		
145 APCD Installations	199.04	0.03	-	199.80		
Total Emissions During Construction	203.57	0.03	-	204.35	6.81	amortized over 30 years

Gasoline Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption							
	gal/1,000 ton-mile	ton	1 ton-m/g	mpg	**gallon fuel consumed per year due to PAR 1469**	mmgal	Baseline - Year 2016 Estimated Basin Fuel Demand (mmgal/yr)	Total % Above Baseline
LDA/LDT1/LDT2				20.00	1,051			
MDT				10.00	197			
Reference:					1,248	0.0012	6,997	0.00002% gasoline

National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php

EPA Fuel Economy report: https://www.epa.gov/fueleconomy/trends-report

California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html

Diesel Fuel Usage Estimations

Equipment	gal/hr	hrs/day	# piece	gals			
Aerial lift	0.96	4	145	2784			
Forklifts	0.96	4	151	2899.2			
Air Compressors	0.9	4	145	2610			
Welders	0.331	4	151	999.62			
ref: fuel usage scaled from SOx emissions in OFFROAD (CARB)				9292.82	0.0093	749	0.0012% diesel

Appendix C
CEQA Operational Impact Evaluations - Assumptions and Calculations
(2018/2/14 rev)

Emissions Summary

PAR 1469 Requirement	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
Increased source test vehicles (LDA)	0.39	0.03	0.07	0.72	0.01	0.00	1.30	-	-	1.30
Increased maintenance truck (MDT)	0.10	0.03	0.13	0.04	0.01	0.00	0.08	-	-	1.99
Total	**0.48**	**0.06**	**0.20**	**0.75**	**0.02**	**0.00**	**1.38**	**-**	**-**	**3.29**

All sites	
Max. # used/day	**Max. # day used/yr**
4	98
4	98

Note:

1. It is conservatively assumed in the peak day, there will be an additional 4 source test vehicles (LDA) and 4 maintenance truck (MDT) to all PAR 1469 affected facilities.
2. It is conservatively assumed in the peak year, there will be an additional 98 source test vehicles (LDA) and 98 maintenance truck (MDT) to all PAR 1469 affected facilities.
3. Each LDA and each MDV is assumed to travel round trip up to 40 miles.
4. The increased medium duty truck is for additional waste disposal truck, filter replacement , filter leak inspection and other maintenance work for the APCDs.

Medium-Duty Truck (MDT) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	0.26	0.08	0.37	0.10	0.02	0.00	505.00			505.00
g/vehicle (IDLEX)	0.33	0.05	0.01	0.01	0.02	0.00	139.57			139.57
lb/day, MT/day for GHG	0.02	0.01	0.03	0.01	0.00	0.00	0.02	-	-	0.02

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

Light-Duty Automobiles (LDA) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	1.10	0.10	0.20	2.03	0.03	0.00	330.83			330.83
lb/day, MT/day for GHG	0.10	0.01	0.02	0.18	0.00	0.00	0.01	-	-	0.01

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

ENERGY CALS

Category	EPA/NHTSA Fuel Consumption						
	gal/1,000 ton-mile	ton	1 ton-m/g	mpg	**gallon fuel consumed per year due to PAR 1469**	Baseline - Year 2016 Estimated Basin Fuel Demand (mmgal/yr)	Total % Above Baseline
Increased source test vehicles (LDA)				20.00	196		
Increased maintenance truck (MDT)				10.00	392		
Total					588	6,997	0.00001% gasoline

Reference:

EPA Fuel Economy report: https://www.epa.gov/fueleconomy/trends-report

National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php

California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html

Operation- Energy and GHG

HEPA filter and blower

Blower (100 bhp)	**Consumption (GW-h/yr)**	**Consumption in MWh/yr**
	0.001788	1.788

Ref: R1420.2 EA

	CO2	**CH4**	**N2O**	**CO2e**
Intensity (lb/MWhr)	702.44	0.03	0.01	704.95
MT/yr for GHG	0.57	0.00	0.00	0.57
Total MT/yr for GHG	82.61	0.00	0.00	82.90

Max. # of blowers (HEPA filter and blower)	**Max. Total Energy Consumption (MWh/yr)**
145	259.26

Appendix C (Final EA)
CEQA Construction Impact Evaluations - Assumptions and Calculations

Criteria Pollutant Emissions Summary

PAR 1469 Requirement	VOC, lb/day	NOx, lb/day	CO, lb/day	SOX, lb/day	PM10, lb/day	PM2.5, lb/day
1 tank relocation (Summer)	0.37	1.80	2.10	0.004	0.25	0.15
1 tank relocation (Winter)	0.38	1.81	2.06	0.004	0.25	0.03
Peak Day - 3 tank relocation on the same day	1.13	5.43	6.30	0.01	0.75	0.45
12 APCD Installations (Summer)	7.11	41.94	46.60	0.08	4.30	3.13
12 APCD Installations (Winter)	7.17	42.02	46.06	0.08	4.30	3.13
Peak Day - 12 APCD Installations on the same day	7.17	42.02	46.60	0.08	4.30	3.13
Daily Peak Construction Emissions	7.17	42.02	46.60	0.08	4.30	3.13
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75.00	100.00	550.00	150.00	150.00	55.00

Note:

1. The emissions are estimated using CalEEMod.
2. Tank relocation is expected to occur in the first 90 days after the rule is adopted. It is conservatively assumed in the peak day, there will be 3 tank relocation work among PAR1469 affected facilities.
3. APCD installation is expected to occur 1 year after the rule is adopted and therefore it has no overlap with tank relocation work. It is conservatively assumed in the peak day, there will be 12 APCD installtion work among PAR1469 affected facilities.

GHG Emissions Summary

PAR 1469 Requirement	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr		
1 tank relocation	0.76	1.10E-04	-	0.76		
6 tank relocation	4.53	0.00	-	4.55		
12 APCD Installations	16.47	2.52E-03	-	16.54		
132 APCD Installations	181.19	0.03	-	181.89		
Total Emissions During Construction	185.72	0.03	-	186.43	6.21	amortized over 30 years

Gasoline Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption							
	gal/1,000 ton-mile	ton	1 ton-m/g	mpg	gallon fuel consumed per year due to PAR 1469	mmgal	Baseline - Year 2016 Estimated Basin Fuel Demand (mmgal/yr)	Total % Above Baseline
LDA/LDT1/LDT2				20.00	1,014			
MDT				10.00	190			
Reference:					1,205	0.0012	6,997	0.00002% gasoline

National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php

EPA Fuel Economy report: https://www.epa.gov/fueleconomy/trends-report

California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html

Diesel Fuel Usage Estimations

Equipment	gal/hr	hrs/day	# piece	gals			
Aerial lift	0.96	4	145	2784			
Forklifts	0.96	4	151	2899.2			
Air Compressors	0.9	4	145	2610			
Welders	0.331	4	151	999.62			
ref: fuel usage scaled from SOx emissions in OFFROAD (CARB)				9292.82	0.0093	749	0.0012% diesel

Appendix C (Final EA)
CEQA Operational Impact Evaluations - Assumptions and Calculations

Emissions Summary

PAR 1469 Requirement	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
Increased source test vehicles (LDA)	0.39	0.03	0.07	0.02	0.01	0.00	1.30	-	-	1.30
Increased maintenance truck (MDT)	0.10	0.03	0.13	0.04	0.01	0.00	0.08	-	-	1.99
Total	0.48	0.06	0.20	0.06	0.02	0.00	1.38	-	-	3.29

All sites	
Max. # used/day	Max. # day used/yr
4	98
4	98

Note:

1. It is conservatively assumed in the peak day, there will be an additional 4 source test vehicles (LDA) and 4 maintenance truck (MDT) to all PAR 1469 affected facilities.
2. It is conservatively assumed in the peak year, there will be an additional 98 source test vehicles (LDA) and 98 maintenance truck (MDT) to all PAR 1469 affected facilities.
3. Each LDA and each MDV is assumed to travel round trip up to 40 miles.
4. The increased medium duty truck is for additional waste disposal truck, filter replacement , filter leak inspection and other maintenance work for the APCDs.

Medium-Duty Truck (MDT) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	0.26	0.08	0.37	0.10	0.02	0.00	505.00			505.00
g/vehicle (IDLEX)	0.33	0.05	0.01	0.01	0.02	0.00	139.57			139.57
lb/day, MT/day for GHG	0.02	0.01	0.03	0.01	0.00	0.00	0.02	-	-	0.02

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

Light-Duty Automobiles (LDA) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	1.10	0.10	0.20	0.06	0.03	0.00	330.83			330.83
lb/day, MT/day for GHG	0.10	0.01	0.02	0.01	0.00	0.00	0.01	-	-	0.01

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

*This appendix represents the Final EA calculations.

ENERGY CALS

Category	EPA/NHTSA Fuel Consumption						
	gal/1,000 ton-mile	ton	1 ton-m/g	mpg	gallon fuel consumed per year due to PAR 1469	Baseline - Year 2016 Estimated Basin Fuel Demand (mmgal/yr)	Total % Above Baseline
Increased source test vehicles (LDA)				20.00	196		
Increased maintenance truck (MDT)				10.00	392		
Total					588	6,997	0.00001% gasoline

Reference:

EPA Fuel Economy report: https://www.epa.gov/fueleconomy/trends-report

National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php

California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html

Operation- Energy and GHG

HEPA filter and blower

Blower (100 bhp)	Consumption (GW-h/yr)	Consumption in MWh/yr
	0.001788	1.788

Ref: R1420.2 EA

	CO2	CH4	N2O	CO2e
Intensity (lb/MWhr)	702.44	0.03	0.01	704.95
MT/yr for GHG	0.57	0.00	0.00	0.57
Total MT/yr for GHG	75.20	0.00	0.00	75.47

Max. # of blowers (HEPA filter and blower)	Max. Total Energy Consumption (MWh/yr)
132	236.016

*This appendix represents the Final EA calculations.

APPENDIX D

PAR 1469 List of Affected Facilities

Appendix D: PAR 1469 List of Affected Facilities

Facility Name	Facility ID	On Lists Per Government Code §65962.5 Per EnviroStor?	Address	City	Zip	Located Within Two Miles of Airport?	Nearest Sensitive Receptor	Approx. Distance to Nearest Sensitive Receptor (m)
K & L Anodizing Corp	236	No	1200 S Victory Blvd	Burbank	91502	No	Residence	≤25
Cal-Tron Plating Inc	1953	Yes	11919 Rivera Rd	Santa Fe Springs	90670	No	Hospital	>1000
Jan-Kens Enameling Co Inc	3887	No	715 E Cypress Ave	Monrovia	91016	No	Residence	101-200
El Monte Plating Co, Darrel Jensen	4119	Yes	11409 Stewart St	El Monte	91731	No	Residence	≤25
Alco Cad-Nickel Plating Corp	4346	No	1400 Long Beach Ave	Los Angeles	90021	No	Residence	51-75
Accu Chrome Plating Co Inc	5137	No	115 W 154Th St	Gardena	90248	No	Residence	501-1000
Chromal Plating Co	6616	No	1748 N Workman St	Los Angeles	90031	No	Residence	≤25
Angelus Plating Wks	6842	Yes	1713 W 134Th St	Gardena	90249	No	Residence	201-300
Anodyne Inc	7011	No	2226-223 S Susan St	Santa Ana	92704	No	School	>1000
Electrolizing Inc	7978	No	1947 Hooper Ave	Los Angeles	90011	No	Residence	26-50
Verne'S Chrome Plaitng Inc	8172	No	1559 W El Segundo Blvd	Gardena	90249	No	Residence	≤25
Omni Metal Finishing Inc	8408	Yes	11665 Coley River Cir	Fountain Valley	92708	No	Residence	101-200
Reuland Electric Co, H. Britton Lees	8820	No	17969 Railroad St	City Of Industry	91748	No	N/A	>1000
Cal Electroplating Inc	9120	Yes	3517 E Olympic Blvd	Los Angeles	90023	No	Residence	≤25
South West Plating Co	9489	No	1344 W Slauson Ave	Los Angeles	90044	No	Residence	26-50
Electronic Chrome Grinding Co Inc	10005	No	9128-32 Dice Rd	Santa Fe Springs	90670	No	Residence	76-100
Bronzeway Plating Corp	11174	No	3432 E 15Th St	Los Angeles	90023	No	Residence	201-300
Hixson Metal Finishing	11818	Yes	829 Production Pl	Newport Beach	92663	No	Residence	26-50
All American Manufacturing Co	11997	No	2201 E 51St St	Los Angeles	90058	No	School	501-1000
Size Control Plating Co Inc	12213	No	13349 E Temple Ave	La Puente	91746	No	School	101-200
Lmdd Enter. Inc., Dixon Hard Chrome, Dba	12748	No	11645 Pendleton St	Sun Valley	91352	Yes	Daycare Center	51-75
Hartwell Corp	12841	Yes	9810 6Th St	Rancho Cucamonga	91730	Yes	Residence	201-300
Barry Ave Plating Co Inc	13618	No	2210 Barry Ave	Los Angeles	90064	No	Residence	51-75
Chromplate Company	13844	No	1127 W Hillcrest Blvd	Inglewood	90301	Yes	School	201-300
Van Nuys Plating Inc	13945	No	6109 Vesper Ave	Van Nuys	91411	No	Daycare Center	< 25
S & K Plating Inc	15021	No	2727 N Compton Ave	Compton	90222	No	Residence	26-50
Anaplex Corp	16951	No	15547 Garfield Ave	Paramount	90723	No	Residence	301-500
Steve'S Plating Corporation	17098	No	3101-111 N San Fernando Blvd	Burbank	91504	Yes	Residence	N/A
Kryler Corp	17168	No	1217 E Ash Ave	Fullerton	92831	No	Residence	301-500
A-H Plating Inc	17812	Yes	1837 N Victory Blvd	Burbank	91504	Yes	Residence	201-300
Techplate Engineering Co	18118	No	1571 S Sunkist St	Anaheim	92806	No	Residence	301-500
Orange County Plating Co Inc	18414	Yes	940-70 N Parker St	Orange	92867	No	Residence	301-500
Christensen Plating Wks Inc	18460	No	2455 E 52Nd St	Vernon	90058	No	School	501-1000
Stutzman Plating Co	18845	No	5045 Exposition Blvd	Los Angeles	90016	No	Residence	110-150
Bowman Plating Co Inc	18989	No	2631 E 126Th St	Compton	90222	No	Residence	51-75
Pemaco Metal Processing Corp	19234	No	2125 Lemon St	Alhambra	91803	No	Residence	101-200
Metal Surfaces Inc	20280	No	6048-60 Shull St	Bell Gardens	90201	No	Residence	51-75
Aircraft X-Ray Labs Inc	21321	No	5216 Pacific Blvd	Huntington Park	90255	No	Residence	26-50
Coast Plating Inc 1	21593	Yes	128 W 154Th St	Gardena	90248	No	Residence	501-1000
Domar Precision Inc	23594	No	5250 E Southern Ave	South Gate	90280	No	Residence	≤25
Pennoyer-Dodge Co	24129	No	6634 San Fernando Rd	Glendale	91201	No	Residence	≤25
Serv Plating Co Inc	24240	No	1855 E 62Nd St	Los Angeles	90001	No	Residence	26-50

Aaa Plating & Inspection Inc	25087	Yes	424 Dixon St	Compton	90222	No	Residence	≤25
Universal Metal Plating & Polishing	39156	No	1526 W 1St St	Azusa	91702	No	School	>1000
Hawker Pacific Aerospace	40829	No	11240 Sherman Way	Sun Valley	91352	Yes	School	101-200
Lubeco Inc	41229	Yes	6859 Downey Ave	Long Beach	90805	No	Residence	76-100
Brite Plating Co Inc	42645	No	1313 Mirasol St	Los Angeles	90023	No	Residence	101-200
Neutron Plating Inc	42712	Yes	2993 E Blue Star St	Anaheim	92806	No	Residence	501-1000
Brothers Plating	44584	No	334 S Motor Ave	Azusa	91702	No	School	>1000
E.M.E. Inc/Electro Machine & Engineering	45938	No	431 E Oaks St	Compton	90222	No	Residence	51-75
Fine Quality Metal Finishing	47329	No	1640 Daisy Ave.	Long Beach	90813	No	Residence	90
All Metals Processing Of Orange Co Inc	47835	No	8401 Standustrial Ave	Stanton	90680	No	Residence	≤25
Yolandas Plating	52142	No	3419 Union Pacific Ave	Los Angeles	90023	No	Residence	101-200
Quaker City Plating & Silversmith Ltd	52525	No	11729 E Washington Blvd	Whittier	90606	No	Convalescent Home	76-100
Carter Plating Inc	53447	No	1842 N Keystone St	Burbank	91504	Yes	Residence	201-300
Artistic Silver Plating	55661	No	2344 Orange Ave	Signal Hill	90806	Yes	Residence	26-50
Maxima Enterprises, Inc.	62731	No	23920 S Vermont	Harbor City	90710	No	Residence	76-100
Crown Chrome Plating Inc	70220	No	14660 Arminta St	Van Nuys	91402	No	Residence	201-300
Aerodynamics Plating Co Inc	74131	No	13620 S St Andrews Pl	Gardena	90815	No	Residence	101-200
Ponam Ltd, Inc	78083	No	6618 San Fernando Rd	Glendale	91201	No	Residence	≤25
Palm Springs Plating	80799	No	345 Del Sol Rd	Palm Springs	92262	Yes	Residence	101-200
Dnr Industries, Inc.	82730	No	1558- S Anaheim Blvd	Anaheim	92805	No	Residence	301-500
Roto-Die Company Inc	92753	No	712 N Valley St	Anaheim	92801	Yes	Residence	101-200
Decore Plating	98554	Yes	434 W 164Th St	Carson	90248	No	Residence	≤25
Moog, Inc (Hard, Ano)	102334	No	20263 S Western Ave	Torrance	90501	No	N/A	>1000
Hightower Plating & Manufacturing Co	103703	No	2090 N Glassell Blvd	Orange	92865	No	Residence	501-1000
Valley-Todeco, Inc	106838	No	12975 Bradley Ave	Sylmar	91342	No	Residence	501-1000
Markland Manufacturing Inc	107149	No	1111 E Mcfadden Ave	Santa Ana	92705	No	Residence	51-75
Cppg, Inc	107644	No	3911 E Miraloma Ave	Anaheim	92806	No	Residence	201-300
Mjb Chrome Plating & Polishing	108315	No	236 S Riverside Ave	Rialto	92376	No	Residence	101-200
Valley Plating Works Inc	109562	Yes	5900 E Sheila St	Commerce	90040	No	Residence	201-300
Chrometech Inc	111005	No	2309 W 2Nd St & 2310 Cape Code	Santa Ana	92703	No	Residence	201-300
Coast Plating Inc 2	112968	No	417 W 164 Th St	Carson	90248	No	Residence	26-50
Alloy Processing	117435	No	1900 W Walnut	Compton	90220	No	Residence	400
Product Engineering Corporation	117804	No	2645 Maricopa St	Torrance	90503	No	Residence	101-200
Bowman Field, Inc, Chrome Nickel Platin	118602	No	2820 E Martin L King Jr Blvd	Lynwood	90262	No	Residence	26-50
Dynamic Plating	120704	Yes	952 W 9Th St	Upland	91786	No	Residence	201-300
Barken'S Hardchrome, Inc	121215	Yes	239 E Greenleaf Blvd	Compton	90220	No	Residence	≤25
Metal Finishing Marketers Inc	122365	No	1401 Mirasol St	Los Angeles	90023	No	Residence	101-200
Supreme Plaitng & Coating, L De La Rosa	122432	No	330 E Beach Ave	Inglewood	90302	No	Residence	≤25
Superior Plating And Bumpers	124325	No	1044 E 2 Nd St	Pomona	91763	No	Residence	≤25
Santec, Inc	125806	No	3501 Challenger St	Torrance	90503	No	Residence	N/A
Allen Industrial & Machine	129216		P. O. Box 776	Banning	92220		Residence	101-200
Multichrome/Microplate Co., Inc	129249	No	1013 W Hillcrest Blvd	Inglewood	90301	Yes	Daycare Center	301-500
Mcdonnell Douglas/Boeing Company	131232	No	15400 Graham Ave	Huntington Beach	92647	No	Residence	501-1000
Whiting Enterprises, Inc	131266	No	10140 Romandel Ave	Santa Fe Springs	90670	No	N/A	>1000
Rtr Industries Llc/Grant Piston Ring Co	132074	No	1360 Jefferson St	Anaheim	92807	No	Residence	301-500
Lm Chrome Corp	132333	No	654 E Young St	Santa Ana	92704	Yes	Residence	>1000
Hydroform Usa	133930	No	2848 E. 208Th St.	Carson	90810	No		301-500

Morrell'S Electro Plating, Inc	136913	No	432 E Euclid Ave	Compton	90222	No	Residence	>100
La Habra Plating Company	140017	No	900 S Cypress St	La Habra	90631	No	Residence	51-75
Ducommun Aerostructures Inc	140811	No	801 Royal Oak Dr	Monrovia	91016	No	Residence	101-200
Electrode Tech Inc, Reid Metal Finishing	143630	Yes	3110 W Harvard St	Santa Ana	92704	No	School	101-200
C&M Gold Plating, Adalberto Coldivar C	144272	No	948 W Industrial St	Azusa	91702	No	N/A	>1000
Andres Technical Plating	144438	No	1055 Ortega Way	Placentia	92870	No	School	101-200
Beo-Mag Plating Inc	146448	No	3315 W Harvard St	Santa Ana	92704	No	School	301-500
Aviation Repair Solutions Inc	147364	No	1480 Canal Ave	Long Beach	90813	No	Residence	501-1000
Fullerton Custom Works Inc	148373	No	1163 E Elm St	Fullerton	92831	No	Residence	301-500
Magma Finishing Corp.	148451	No	2294 N Batavia St D	Orange	92865	No		
Rebilt Metalizing Co	150363	No	2229 E 38Th St	Vernon	90058	No	Hospital	501-1000
South Bay Chrome	152888	No	2041 S Grand Ave	Santa Ana	92705	No	School	>1000
Tool & Jig Plating Company, A. Williams	153762	No	7635 S. Baldwin Place	Whittier	90602	No	Residence	N/A
A & Z Grinding, Inc	154758	No	1543 Nadeau St	Los Angeles	90001	No	Residence	≤25
Gardena Specialized Processing Inc	158699	No	16520 S Figueroa St	Gardena	90248	No	Residence	26-50
Ceo-To-Go/Ride Wright Wheels	166355	No	3080 E. La Jolla St	Anaheim	92806	No		301-500
Pacific Chrome Services	173247	No	603 E. Alton Ave.	Santa Ana	92705	No		501-1000
Triumph-Embee	173913	No	2136-68 S Hathaway St	Santa Ana	92705	No	Residence	101-200
Shimadzu Precision Instruments, Inc.	177256	No	3645 N. Lakewood Blvd.	Long Beach	90808	Yes		
Platinum Surface Coating	177440	No	1179 N. Fountain Way	Anaheim	92806	No		201-300
Allfast Fastening Sys Inc	178908	No	15200 Don Julian Rd	City Of Industry	91745	No	School	501-1000
Nasmyth Tmf, Inc.	179008	No	3401 Pacific Ave	Burbank	91505	Yes	School	26-50
Chromadora	180575	Yes	2515 S. Birch St.	Santa Ana	92707	No		301-500
V&M Aerospace Llc	180918	Yes	14024 S Avalon Blvd	Los Angeles	90061	No	Residence	201-300
Sunvair, Inc.	181234	No	29145 The Old Road	Valencia	91355	No		
Triumph Processing Inc	800267	No	2588-2605 Industry Way	Lynwood	90262	No	Daycare Center	101-200

Total = 115 facilities

NAICS codes for PAR 1469 affected facilities

Industry	NAICS Code	# of Facilities
Fabricated Metal Manufacturing	**332**	**93**
Metal Crown, Closure, and Other Metal Stamping (except Automotive)	332119	1
Saw Blade and Handtool Manufacturing	332216	1
Machine Shops	332710	3
Bolt, Nut, Screw, Rivet, and Washer Manufacturing	332722	2
Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	332812	2
Electroplating, Plating, Polishing, Anodizing, and Coloring	332813	82
Plumbing Fixture Fitting and Trim Manufacturing	332913	2
Other Manufacutring	**333-337**	**12**
Other Industrial Machinery Manufacturing	333249	1
Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	333514	1
Cutting Tool and Machine Tool Accessory Manufacturing	333515	1
Other Measuring and Controlling Device Manufacturing	334519	2
Motor and Generator Manufacturing	335312	1
Motor Vehicle Gasoline Engine and Engine Parts Manufacturing	336310	1
Other Motor Vehicle Parts Manufacturing	336390	1
Aircraft Manufacturing	336411	1
Other Aircraft Parts and Auxiliary Equipment Manufacturing	336413	2
Showcase, Partition, Shelving, and Locker Manufacturing	337215	1
Wholesale and Retail Trade	**42, 44**	**2**
Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers	423860	1
Motorcycle, ATV, and All Other Motor Vehicle Dealers	441228	1
Professional, Scientific, and Technical and Other Services	**54, 56**	**5**
All Other Professional, Scientific, and Technical Services	541990	1
All Other Support Services	561990	4
Repair and Maintenance	**811**	**3**
Automotive Body, Paint, and Interior Repair and Maintenance	811121	1
Other Electronic and Precision Equipment Repair and Maintenance	811219	1
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	811310	1
Total		**115**

APPENDIX E

PAR 1469 Comment Letters Received on the Draft EA and Responses to Comments

Comment Letter #1

From:	Sam Wang
To:	Neil Fujiwara; Eugene Kang; Robert Gottschalk; Barbara Radlein; Daphne Hsu; Shah Dabirian
Cc:	Susan Nakamura; Jillian Wong; Michael Krause
Subject:	FW: Comments from CHEMEON Surface Technology for CEQA Public Review re: PAR 1469 Hexavalent Chromium Emissions
Date:	Friday, March 16, 2018 12:11:39 PM
Attachments:	12239-CHEM-18-Seal-Ad-Resize-for-Client-hp1.pdf CHEMEON TCP HF NP as an Anodic Seal Study-email.pdf Naval Power and Force Projection Article CHEMEON SCAQMD Hex Chrome Emissions July 17.pdf

FYI, CHEMEON's written comments for PAR1469

From: Ted Ventresca [mailto:tventresca@chemeon.com]
Sent: Thursday, March 15, 2018 6:24 PM
To:
Subject: Comments from CHEMEON Surface Technology for CEQA Public Review re: PAR 1469 Hexavalent Chromium Emissions

Good Afternoon Mr. Wang.

As per the February 15th notice provided by Ms. Radlein, the following comments are submitted to the CEQA within the 32 public review period by CHEMEON Surface Technology:

Viable MIL-SPEC alternatives to replace hexavalent chromium (a.k.a. sodium dichromate/dilute chrome) exist, such as CHEMEON TCP-HF (Hexavalent Free) and TCP-NP (No Prep) that wholly remove the substances being regulated in PAR 1469 (dichromate seals in particular). There is ample 3rd part evidence that these chemistries can be used in lieu of hexavalent chromium, thus reducing the health risks as well as the financial burden of increased regulation and the potential of associated penalties for lack of compliance to PAR 1469.

CHEMEON has just released the attached report (CHEMEON TCP-HF and CHEMEON TCP-NP as an Anodic Seal.pdf) which provides in-depth detail and third party validation surrounding CHEMEON TCP-HF (Hexavalent Free) and TCP-NP (No-Prep) as an Anodic Seal.

The report validates and reconfirms that CHEMEON TCP-HF and NP are a safe, non carcinogenic and cost/energy saving anodic seal solutions while eliminating carcinogenic Cr(VI) emissions, potential fines and plant/shop closures.

These findings were presented at the Florida Finishing Association Conference in early February and the presentation received quite positive response/interest.

We anticipate that these findings, coupled with the technical expertise provided by CHEMEON will:

1. Aid a process shop in obtaining a variance from a Prime Contractor or OEM to allow CHEMEON TCP-HF or CHEMEON TCP-NP as a direct replacement for specified or currently used sodium dichromate seal chemistry.

and/or

2. Provide the Prime Contractor or OEM specification custodians and Quality Control stakeholders the data and validation necessary to change their existing specifications to allow CHEMEON TCP-HF or CHEMON TCP-NP on the part being processed, as an anodic seal.

3. Allow for CEQA/SCAQMD recognition and possible recommendation of CHEMEON as a safe and proven alternative to the existing practice and use of hexavalent chrome (Cr(VI), (sodium dichromate /dilute chrome.)

Key aspects of the report are as follows:

- Third Party validation that CHEMEON TCP-HF (Hexavalent Free) and NP (No Prep) meet and exceed MIL SPEC performance as a room temperature anodic seal
- TCP-HF and TCP-NP applied as anodic seal demonstrated corrosion performance that greatly exceeds the specification requirements.
- After sealing with TCP-HF and TCP-NP, the anodize coating passed paint adhesion for both Type II and Type IIB on 2024 and 7075 alloys.
- Corrosion NSS (Neutral Salt Spray) testing revealed that both forms of TCP prevented corrosion on Type II anodize extremely well: no pits were seen after 2,000 hours of testing.
- The TCP seals on thinner Type IIB anodize show some pits visible after 1,648 hours of testing. However, this corrosion did not advance into salt spray failure during the 2,000 hours of neutral salt spray testing.
- Even with thin anodized coatings, TCP seals provide corrosion protection which far surpasses the 336 hour requirement.

We have also provided one sheet overview of the attributes of CHEMEON TCP-HF as an Anodic Seal. In addition, the recent Naval Power and Force Projection Magazine Article is attached (pdf) that details the "top priority" status California and SCAQMD has given to the removal/reduction of hexavalent chromium emissions and the proven safe solution that CHEMEON provides.

If you would like to discuss this report and its finding further, or learn how CHEMEON can aid prime contractors and process shops in their efforts to replace hexavalent chrome, please feel free to contact me. I plan to attend the Friday March 16th meeting in Diamond Bar and look forward to meeting at that time.

Respectfully,

Ted Ventresca
President & Chief Operating Officer
Direct: 775.301.5733 | tventresca@chemeon.com

Response to Comment Letter #1 - CHEMEON

Thank you for your letter. This email does not appear to raise any CEQA issues relative to the analysis in Draft EA or the PAR 1469 rule language. Therefore, no further response is required.

Comment Letter #2

OC Public Works
Integrity, Accountability, Service, Trust
Shane L. Silsby, Director

March 20, 2018

NCL-2018-011

Sam Wang
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

Dear Mr. Wang:

The County of Orange has reviewed the Draft Environmental Assessment to the Proposed Amended Rule 1469 and has no comments at this time. We would like to be advised of any further developments on the project. Please continue to keep us on the distribution list for future notifications related to the project.

If you have any questions, please contact Ashley Brodkin in OC Development Services at (714) 667-8854.

Sincerely,

Richard Vuong, Manager, Planning Division
OC Public Works Service Area/OC Development Services
300 North Flower Street
Santa Ana, California 92702-4048
Richard.Vuong@ocpw.ocgov.com

300 N. Flower Street, Santa Ana, CA 92703
P.O. Box 4048, Santa Ana, CA 92702-4048

www.ocpublicworks.com
714.667.8800 | Info@OCPW.ocgov.com

Response to Comment Letter #2 – Orange County Public Works

Thank you for your email. Your comments do not appear to raise any CEQA issues relative to the analysis in Draft EA or the PAR 1469 rule language. Therefore, no further response is required.

ATTACHMENT J

Proposed Amended Rule 1469

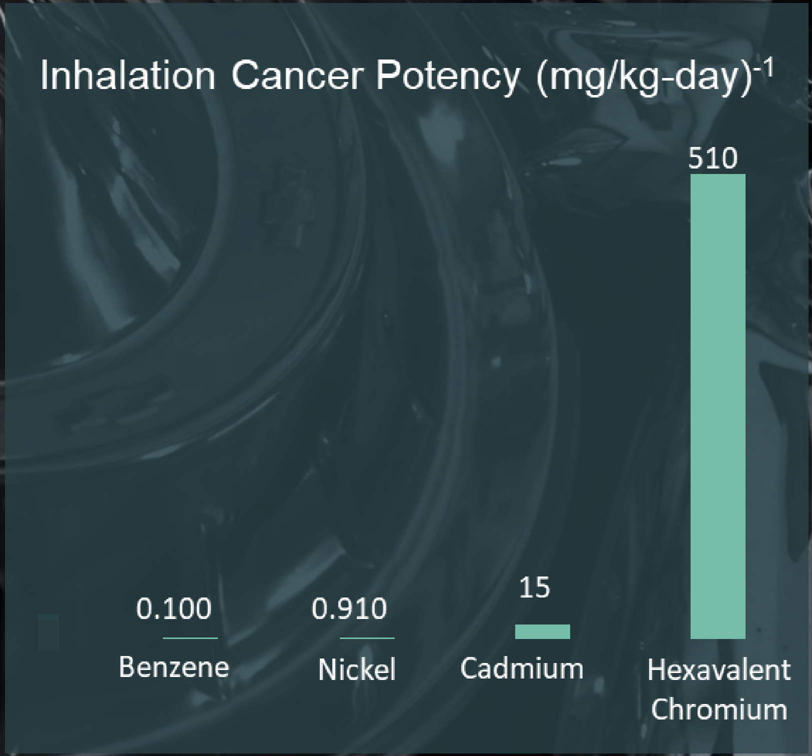
Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing

Governing Board Meeting

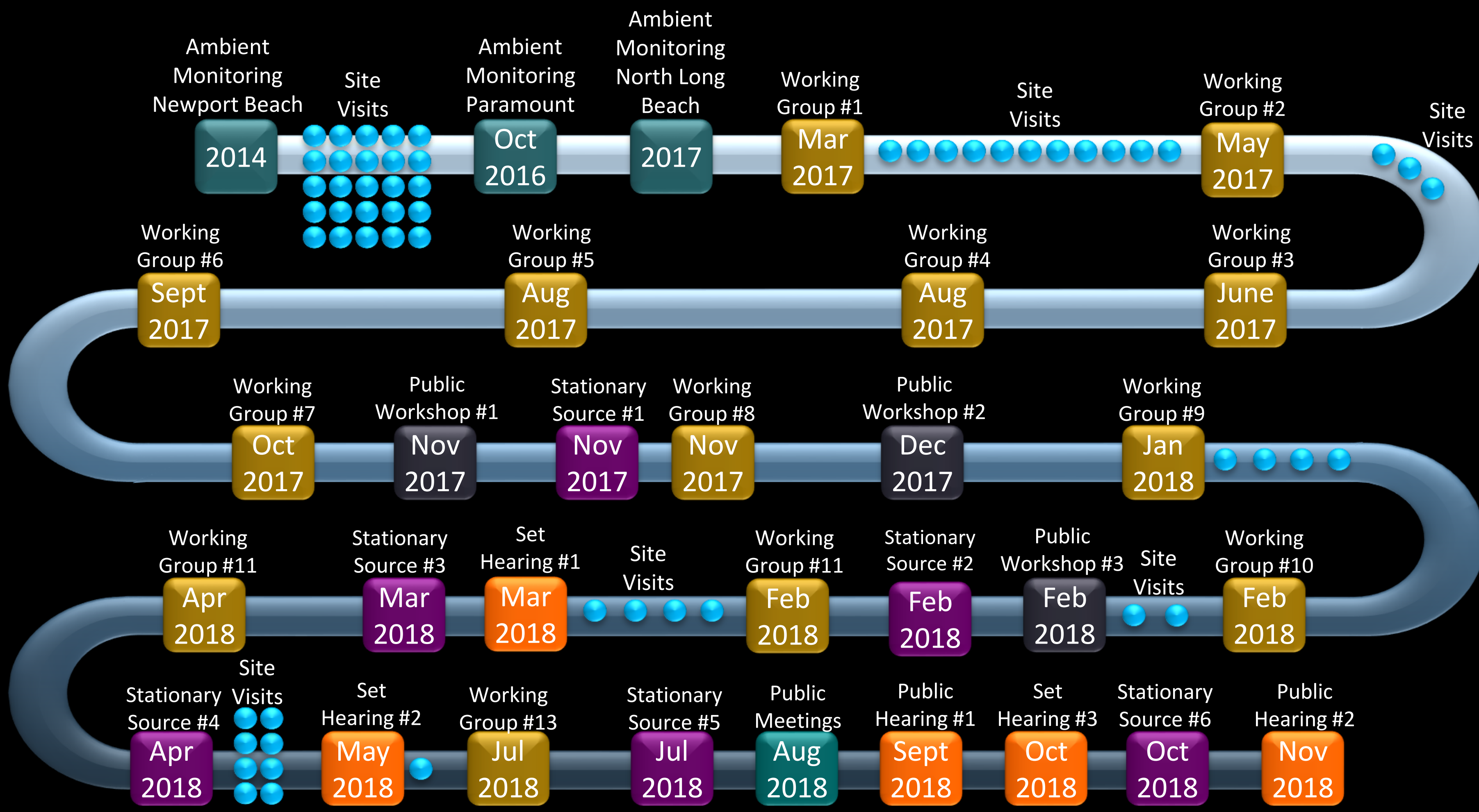
November 2, 2018

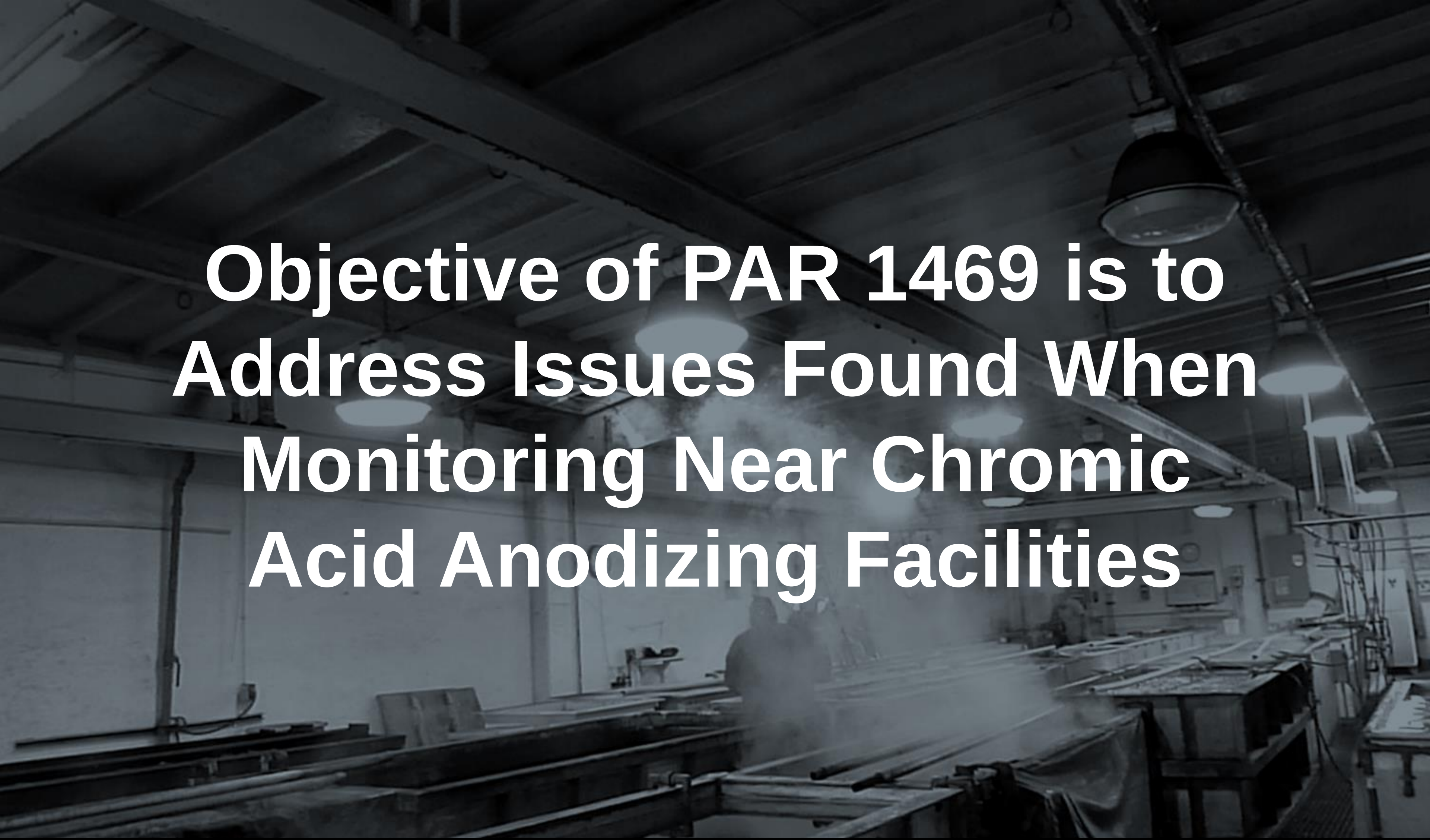
Background

- Rule 1469 was adopted in 1988
- Rule 1469 regulates chromium electroplating and chromic acid anodizing tanks
- Rule 1469 implements
  - CARB Air Toxics Control Measure (ATCM)
  - U.S. EPA National Emission Standards for Hazardous Air Pollutants (NESHAP)
- Hexavalent chromium is a known human carcinogen
  - One of the most potent toxic air contaminants - orders of magnitude higher than other compounds



Extensive Rulemaking Process

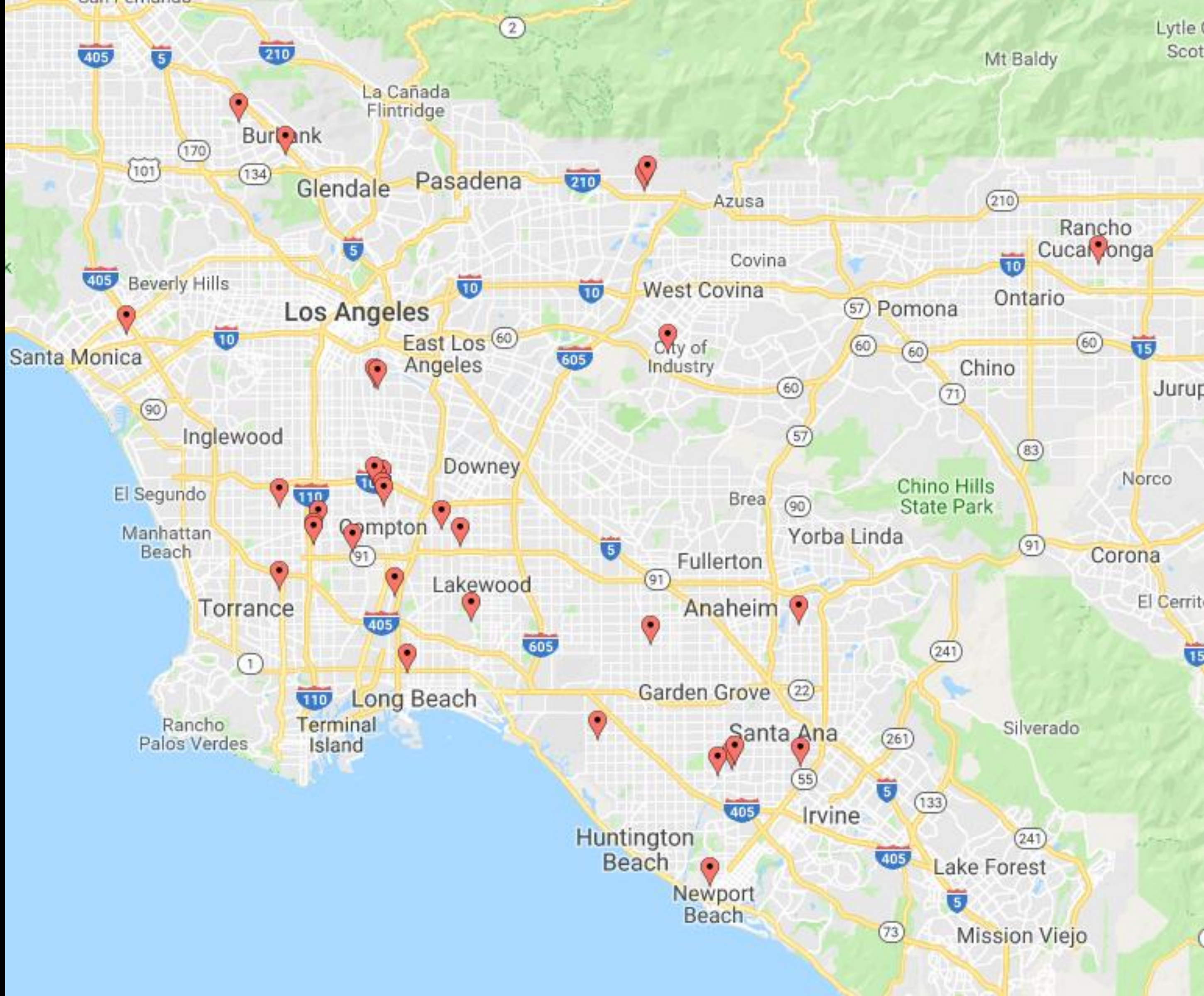




Objective of PAR 1469 is to Address Issues Found When Monitoring Near Chromic Acid Anodizing Facilities


Air Pollution Controls Needed

About 30 chromic acid anodizing facilities have unregulated Tier III Tanks that need air pollution controls



PAR 1469 is Designed to Address These Issues

PAR 1469

High level of hexavalent chromium at ambient monitors near 3 chromic acid anodizing facilities

Identified **<u>unregulated tanks</u>** with hexavalent chromium emissions **<u>300% above</u>** proposed emission rate (0.2 mg/hour)

Building cross-drafts (openings on opposite sides of building) contributed to high ambient levels of hexavalent chromium

PAR 1469 Core Provisions

Pollution Controls for Unregulated Hexavalent Chromium Tanks

New Building Enclosure Requirements

New Periodic Source Testing and Enhanced Parameter Monitoring

Enhanced Housekeeping and Best Management Practices

Emission Control Requirements for Tier I, II, and III Tanks

Tier I
Low emission potential

No Controls

Tier II
Modest emission potential

Tank Covers and/or Mechanical Controls

Tier III
High emission potential

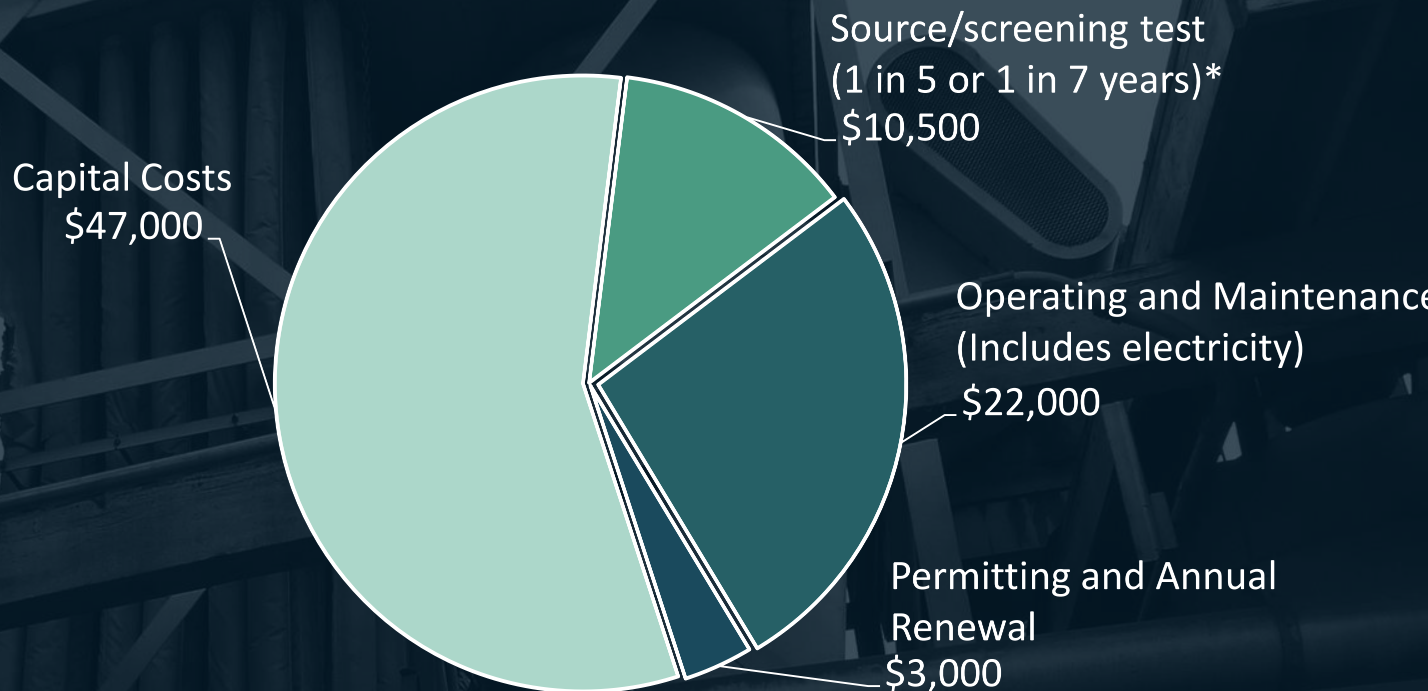
Add-on Air Pollution Control Devices

About half of the Tier III tanks* are expected to meet Tier II requirements by:

- Lowering tank temperature
- Reducing hexavalent chromium concentration in the bath
- Other stripping techniques such as chemical stripping
- Emissions testing demonstrating below Tier III threshold

*Estimate 46 out of 103 tanks identified in the Socioeconomic Impact Assessment can meet Tier II tank provisions

Annualized Costs for Air Pollution Controls for Chromic Acid Anodizing Facilities



Total Annualized Cost: $82,500

Average Annual Revenue is $14 million**

* Assumes cost in 1 year

** Excludes outlier facility with annual revenue of $167 million

Stationary Source Committee April 2018

- 13 facilities* commented - Overall concern was compliance costs and job impacts
- Staff reached out to each facility to better understand specific issues
- Staff met or had a phone call with 11 of the 13 facilities to discuss their concerns**
- Summary of Specific Issues
    - Source testing frequency
    - Building enclosure provisions
    - Compressed air cleaning requirement
    - Clarifications

*   28 people, some facilities had multiple commenters

** 2 facilities either declined or could not meet with staff

PAR 1469 Revisions Since July

Reduced source testing frequency from 3 years to 5 or 7 years*

Provisions for small, low-use tanks – Meets Tier III standard with pollution controls

Maintained weekly housekeeping provisions, instead of daily

Allow outer tank wall to work as a barrier for compressed air drying

Reduced distance to a roof vent and removed powered roof vent provision

Modified definition of stack for building enclosures

Increased allowable openings for building enclosure from 3 to 3.5%

Allow use of large equipment or structure to eliminate cross-draft

* Based on annual amp-hours

Core Provisions Protected

Emission Standards for Unregulated Tanks

- Small tank, low-use provision – meets Tier III standard with controls

Building Enclosure

- Distance to roof vent
- Definition of stack
- 3.5% allowable openings
- Structures for cross-draft

Source Testing and Parameter Monitoring

- Source testing every 5 or 7 years, depending on annual amp-hours

Housekeeping and Best Management Practices

- Freeboard in permits
- Weekly housekeeping
- Barriers for air drying

* Based on annual amp-hours

Industry Comments at September 7th Public Hearing

- Three facilities commented that PAR 1469 would impact the future of their business and job impacts
- Rules staff visited all three facilities in April
  - July revisions to PAR 1469 specifically addressed their issues
- Cost to revenue for these three facilities is less than 1 percent

Facility	Annual Revenue[1]	SCAQMD Annual Cost[2]	SCAQMD Cost to Revenue Ratio
1	$24,000,000	$3,200	0.01%
2	$7,500,000	$24,000	0.32%
3	$11,500,000	$97,000	0.83%

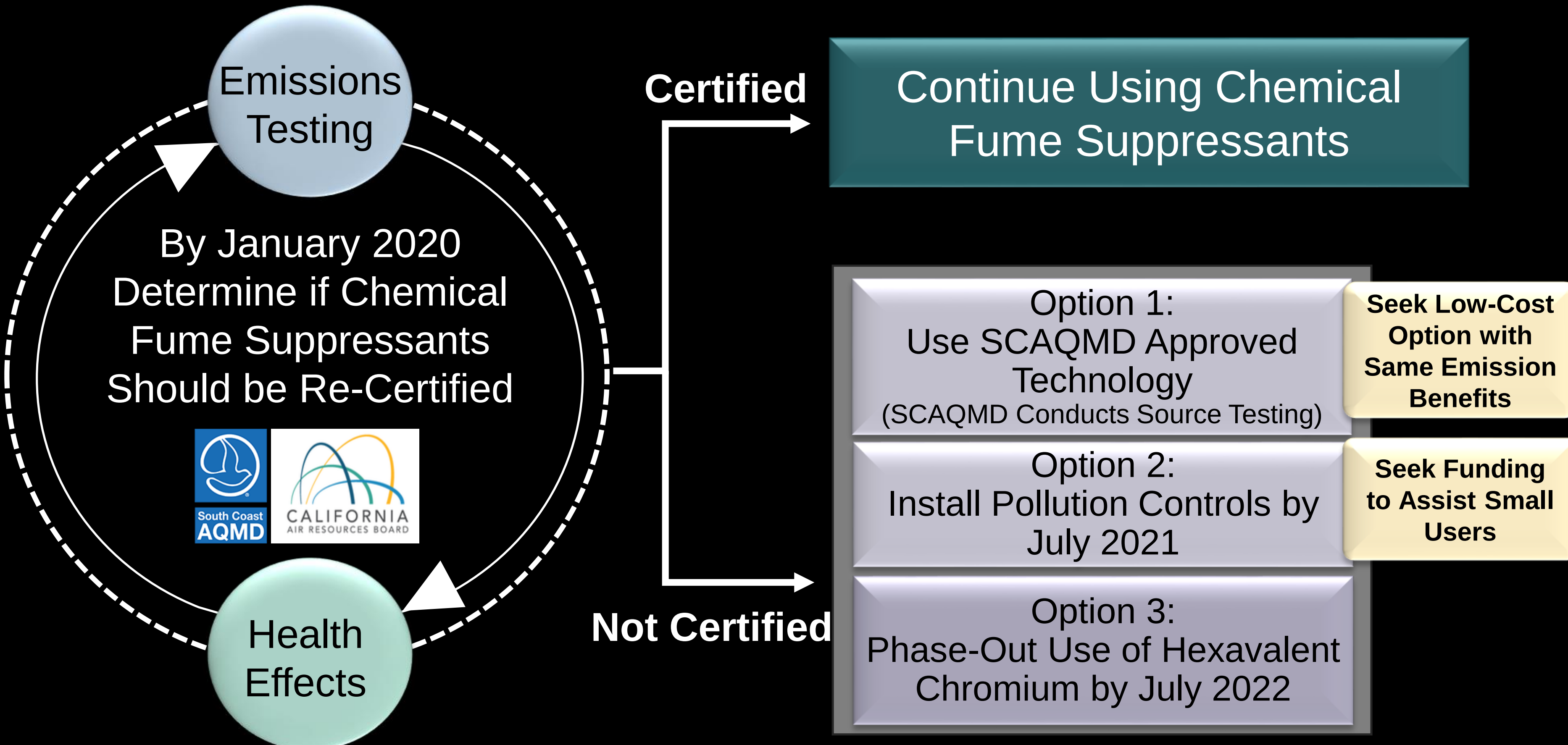
[1] Revenue data from Dun and Bradstreet

[2] High Cost Scenario in Socioeconomic Impact Assessment, based on available data from facility survey data

Community Concerns

	Rule 1469	PAR 1469
Ambient Monitoring Requirements	None	Address in PR 1480
Building Enclosure Requirements	None	Enclosure Requirements
Phase Out of Hexavalent Chromium	None	Incentives
Source Test Frequency	Initial No Periodic	60 Months 84 Months
Use of PFAS Chemical Fume Suppressants	Allowed	Schedule with Possible Ban

Re-Evaluation of Fume Suppressants




PAR 1469 provides greater health
protection for communities by requiring…

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Pollution Controls for Unregulated Tanks

- Install pollution controls on high emitting Tier III tanks
- Incentives to phase-out hexavalent chromium

Source Testing and Parameter Monitoring

- Greater assurance pollution controls properly operating

Building Enclosure Provisions

- Provisions for openings 1,000 feet of sensitive receptor or school
- Minimizes exposure to fugitive emissions

Schedule for PFAS Fume Suppressants

- Schedule for re-certification and possible ban of PFAS fume suppressants

Recommendation

- Approve the Environmental Assessment
- Adopt Proposed Amended Rule 1469