SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
GOVERNING BOARD

Chairman: DR. WILLIAM A. BURKE
Speaker of the Assembly Appointee

Vice Chairman: DR. CLARK E. PARKER, SR.
Senate Rules Committee Appointee

MEMBERS:

BEN BENOIT
Mayor, Wildomar
Cities of Riverside County

JOE BUSCAINO
Council Member, 15th District
City of Los Angeles Representative

MICHAEL A. CACCIOTTI
Council Member, South Pasadena
Cities of Los Angeles County/Eastern Region

JOSEPH K. LYOU, Ph. D.
Governor’s Appointee

LARRY MCCALLON
Mayor, Highland
Cities of San Bernardino County

JUDITH MITCHELL
Mayor Pro Tem, Rolling Hills Estates
Cities of Los Angeles County/Western Region

SHAWN NELSON
Supervisor, Fourth District
County of Orange

V. MANUEL PEREZ
Supervisor, Fourth District
County of Riverside

DWIGHT ROBINSON
Council Member, Lake Forest
Cities of Orange County

JANICE RUTHERFORD
Supervisor, Second District
County of San Bernardino

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

EXECUTIVE OFFICER:
WAYNE NASTRI
# TABLE OF CONTENTS

**EXECUTIVE SUMMARY**

**CHAPTER 1: BACKGROUND**

- INTRODUCTION
- BACKGROUND
- HEXAVALENT CHROMIUM
- REGULATORY HISTORY
- AMBIENT AIR MONITORING NEAR CHROMIC ACID ANODIZING FACILITIES
- AFFECTED RULE 1469 FACILITIES
- PROCESS DESCRIPTION
- SCAQMD SAMPLING
- SUMMARY OF SOURCE TEST RESULTS FOR PLATING AND ANODIZING TANKS
- SITE VISITS
- NEED FOR PROPOSED AMENDMENTS TO RULE 1469
- CONTROL TECHNOLOGIES

**CHAPTER 2: SUMMARY OF PROPOSED AMENDED RULE 1469**

- PROPOSED AMENDMENTS TO RULE 1469

**CHAPTER 3: IMPACT ASSESSMENT**

- AFFECTED SOURCES
- EMISSION IMPACTS
- CALIFORNIA ENVIRONMENTAL QUALITY ACT
- SOCIOECONOMIC IMPACT ASSESSMENT
- DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727
- COMPARATIVE ANALYSIS

**REFERENCES**

**APPENDIX A: RESPONSE TO COMMENTS**
TABLES AND FIGURES

Figure 1-1: Annual Average Hexavalent Chromium Levels at Newport Beach Facility
Figure 1-2: Photograph Taken During Tank Testing
Figure 1-3: Categorization of Tier I, Tier II, and Tier III Hexavalent Chromium Tanks
Figure 1-4: Differences Among Tier I, Tier II, and Tier III Hexavalent Chromium Tanks
Figure 1-5: Distribution of Most Recent Source Tests
Figure 1-6: Slot Velocity Measurements of Emission Collection Systems at Multiple Facilities
Figure 1-7: PAR 1469 Approach
Figure 1-8: Photographs of Trivalent Chromium Electroplated Products
Figure 2-1: Roof View of Stack Opening and Enclosure Opening
Figure 2-2: Building Enclosure Openings Required To Be Closed
Figure 2-3: Compressed Air Drying Near Tier II or Tier III Tank
Figure 2-4: Table 1: Hexavalent Chromium Emission Limits for Hexavalent Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks
Figure 2-5: Table 2: Permit Submittal Schedule for Add-on Air Pollution Control Devices for Previously Existing Tier III Hexavalent Chromium Tanks
Figure 2-6: Flowchart Showing Source Test Requirements
Figure 2-7: Revised Certification Timeline
Figure 2-8: Table 4: Pressure and Air Flow Measurement Parameters
Figure 2-9: Table 5: Add-on Air Pollution Control Device Parameter Monitoring

Table 1-1: 2012 NESHAP Revised Emission Limits
Table 1-2: Newport Beach Facility Hexavalent Chromium Emissions 4/4/14
Table 1-3: Newport Beach Facility Hexavalent Chromium Emissions 4/16/14
Table 1-4: NAICS Codes for PAR 1469 Affected Facilities
Table 1-5: SCAQMD Sample Results of Sealing Tanks
Table 1-6: SCAQMD Sample Results of Chromate Conversion and Dye Tanks
Table 1-7: SCAQMD Sample Results of Rinse, Cleaner, and Desmutt Tanks
Table 1-8: SCAQMD Sample Results of Passivation, Etch, Neutralizer, and Stripping Tanks
Table 1-9: Results for Electrolytic Tier III Tank
Table 1-10: Results of Sampling of Tanks at Various Temperature
Table 1-11: Operational Conditions That Result in Hexavalent Chromium Emissions ≥ 0.20 mg/hr
Table 1-12: Chemical Fume Suppressants Approved for Use at Specific Surface Tensions
Table 1-13: Summary Table of Trivalent Chromium Electroplating
Table 1-14: PAVCO’s Comparison of Trivalent Chromium and Hexavalent Chromium Electroplating
Table 2-1: Hexavalent Chromium Emission Limits for Existing Tanks
Table 2-2: Permit Application Submittal Schedule for Add-On Air Pollution Control Device
Table 2-3: Submittal Dates of Source Test Protocol
Table 2-4: Periodic Measurement to Demonstrate Capture Efficiency
Table 2-5: Pressure and Air Flow Measurement Parameters
EXECUTIVE SUMMARY

South Coast Air Quality Management (SCAQMD) Rule 1169 – Hexavalent Chromium – 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
BACKGROUND
HEXVALENT CHROMIUM
REGULATORY HISTORY
AMBIENT MONITORING NEAR CHROMIC ACID ANODIZING FACILITIES
AFFECTED RULE 1469 FACILITIES
PROCESS DESCRIPTION
SCAQMD SAMPLING
SUMMARY OF SOURCE TEST RESULTS FOR PLATING AND ANODIZING TANKS
SITE VISITS
NEED FOR PROPOSED AMENDMENTS TO RULE 1469
CONTROL TECHNOLOGIES
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/m³) 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/m³. 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/m³ 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 WWWW, 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

<table>
<thead>
<tr>
<th>Operation</th>
<th>Previous Total Chromium Limits</th>
<th>2012 Total Chromium Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Hard Chromium Electroplating</td>
<td>0.015 mg/dscm</td>
<td>0.011 mg/dscm</td>
</tr>
<tr>
<td>Small Hard Chromium Electroplating</td>
<td>0.030 mg/dscm</td>
<td>0.015 mg/dscm</td>
</tr>
<tr>
<td>Decorative Chromium Electroplating</td>
<td>0.010 mg/dscm</td>
<td>0.007 mg/dscm</td>
</tr>
<tr>
<td>Chromium Anodizing</td>
<td>0.010 mg/dscm</td>
<td>0.007 mg/dscm</td>
</tr>
</tbody>
</table>

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.
Chapter 1: Background

**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.
Chapter 1: Background Draft Staff Report

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>
<thead>
<tr>
<th>Summary of Emissions</th>
<th>Measured Concentration (ng/m³)</th>
<th>Mass Emission Rate (lb/hr)</th>
<th>Emission Rate (mg/A-hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions from Anodizing Tank</td>
<td>222,000</td>
<td>No Data</td>
<td>No Data</td>
</tr>
<tr>
<td>Emissions from Sodium Dichromate Seal Tank</td>
<td>217,000</td>
<td>No Data</td>
<td>No Data</td>
</tr>
<tr>
<td>Building #2 Roof Vent</td>
<td>6,520</td>
<td>6.82E-04</td>
<td>No Data</td>
</tr>
<tr>
<td>Anodizing Tank Control System Exhaust</td>
<td>66.3</td>
<td>7.19E-07</td>
<td>0.0068</td>
</tr>
<tr>
<td>Building #3 Roof Vent</td>
<td>18.6</td>
<td>No Data</td>
<td>No Data</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Summary of Emissions</th>
<th>Measured Concentration (ng/m³)</th>
<th>Mass Emissions Rate (lb/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions from Sodium Dichromate Seal Tank</td>
<td>97,200</td>
<td>No Data</td>
</tr>
<tr>
<td>Building #2 Roof Vent</td>
<td>2,510</td>
<td>1.64E-04</td>
</tr>
<tr>
<td>Spray Booth #1 Control System Exhaust</td>
<td>36.0</td>
<td>1.43E-06</td>
</tr>
<tr>
<td>Interior of Building #3 Above Tap Water Rinse Tank</td>
<td>14.0</td>
<td>No Data</td>
</tr>
<tr>
<td>Spray Booth #2 Control System Exhaust</td>
<td>10.8</td>
<td>4.58E-07</td>
</tr>
</tbody>
</table>

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/m³ 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/m³ when monitoring began in the latter part of 2016, and they currently averaged below 0.25 ng/m³. In addition, ambient monitoring levels near the Long Beach facility were initially near 0.9 ng/m³ when monitoring began in May 2017, and they currently average below 0.4 ng/m³. 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

<table>
<thead>
<tr>
<th>Industry</th>
<th>NAICS Code</th>
<th># of Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabricated Metal Manufacturing</td>
<td>332</td>
<td>93</td>
</tr>
<tr>
<td>Metal Crown, Closure, and Other Metal Stamping (except Automotive)</td>
<td>332119</td>
<td>1</td>
</tr>
<tr>
<td>Saw Blade and Hand Tool Manufacturing</td>
<td>332216</td>
<td>1</td>
</tr>
<tr>
<td>Machine Shops</td>
<td>332710</td>
<td>3</td>
</tr>
<tr>
<td>Bolt, Nut, Screw, Rivet, and Washer Manufacturing</td>
<td>332722</td>
<td>2</td>
</tr>
<tr>
<td>Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers</td>
<td>332812</td>
<td>2</td>
</tr>
<tr>
<td>Electroplating, Plating, Polishing, Anodizing, and Coloring</td>
<td>332813</td>
<td>82</td>
</tr>
<tr>
<td>Plumbing Fixture Fitting and Trim Manufacturing</td>
<td>332913</td>
<td>2</td>
</tr>
<tr>
<td>Other Manufacturing</td>
<td>333-337</td>
<td>12</td>
</tr>
<tr>
<td>Other Industrial Machinery Manufacturing</td>
<td>333249</td>
<td>1</td>
</tr>
<tr>
<td>Special Die and Tool, Die Set, Jig, and Fixture Manufacturing</td>
<td>333514</td>
<td>1</td>
</tr>
<tr>
<td>Cutting Tool and Machine Tool Accessory Manufacturing</td>
<td>333515</td>
<td>1</td>
</tr>
<tr>
<td>Other Measuring and Controlling Device Manufacturing</td>
<td>334519</td>
<td>2</td>
</tr>
<tr>
<td>Motor and Generator Manufacturing</td>
<td>335312</td>
<td>1</td>
</tr>
<tr>
<td>Motor Vehicle Gasoline Engine and Engine Parts Manufacturing</td>
<td>336310</td>
<td>1</td>
</tr>
<tr>
<td>Other Motor Vehicle Parts Manufacturing</td>
<td>336390</td>
<td>1</td>
</tr>
<tr>
<td>Aircraft Manufacturing</td>
<td>336411</td>
<td>1</td>
</tr>
<tr>
<td>Other Aircraft Parts and Auxiliary Equipment Manufacturing</td>
<td>336413</td>
<td>2</td>
</tr>
<tr>
<td>Showcase, Partition, Shelving, and Locker Manufacturing</td>
<td>337215</td>
<td>1</td>
</tr>
<tr>
<td>Wholesale and Retail Trade</td>
<td>42, 44</td>
<td>2</td>
</tr>
<tr>
<td>Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers</td>
<td>423860</td>
<td>1</td>
</tr>
<tr>
<td>Motorcycle, ATV, and All Other Motor Vehicle Dealers</td>
<td>441228</td>
<td>1</td>
</tr>
<tr>
<td>Professional, Scientific, and Technical and Other Services</td>
<td>54, 56</td>
<td>5</td>
</tr>
<tr>
<td>All Other Professional, Scientific, and Technical Services</td>
<td>541990</td>
<td>1</td>
</tr>
<tr>
<td>All Other Support Services</td>
<td>561990</td>
<td>4</td>
</tr>
<tr>
<td>Repair and Maintenance</td>
<td>811</td>
<td>3</td>
</tr>
<tr>
<td>Automotive Body, Paint, and Interior Repair and Maintenance</td>
<td>811121</td>
<td>1</td>
</tr>
<tr>
<td>Other Electronic and Precision Equipment Repair and Maintenance</td>
<td>811219</td>
<td>1</td>
</tr>
<tr>
<td>Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance</td>
<td>811310</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>115</strong></td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 1: BACKGROUND

PROCESS DESCRIPTION
Chromium electroplating and chromic acid anodizing are electrolytic processes, where parts and substrates are submerged in a bath containing chromic anhydride (CrO₃), 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

<table>
<thead>
<tr>
<th>Tank Type</th>
<th>Facility</th>
<th>Hexavalent Chromium Content (ppm)</th>
<th>Tank Operating Temperature (°F)</th>
<th>Air Sparging</th>
<th>Surface Area (ft²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Dichromate¹</td>
<td>Facility B</td>
<td>80,400</td>
<td>200</td>
<td>No</td>
<td>12</td>
</tr>
<tr>
<td>Sodium Dichromate</td>
<td>Facility C³</td>
<td>Not Recorded</td>
<td>Not Measured</td>
<td>No</td>
<td>12</td>
</tr>
<tr>
<td>Sodium Dichromate</td>
<td>Facility E³</td>
<td>53,000²</td>
<td>203</td>
<td>No</td>
<td>12</td>
</tr>
<tr>
<td>Sodium Dichromate</td>
<td>Facility D</td>
<td>32,000</td>
<td>194-212</td>
<td>No</td>
<td>32</td>
</tr>
<tr>
<td>Sodium Dichromate</td>
<td>Facility B</td>
<td>24,200</td>
<td>200</td>
<td>No</td>
<td>12</td>
</tr>
<tr>
<td>Sodium Dichromate</td>
<td>Facility A</td>
<td>17,000</td>
<td>196</td>
<td>Yes</td>
<td>30</td>
</tr>
<tr>
<td>Dilute Chromate</td>
<td>Facility A</td>
<td>100</td>
<td>203</td>
<td>Not Recorded</td>
<td>30</td>
</tr>
<tr>
<td>Teflon</td>
<td>Facility C</td>
<td>5</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>4.5</td>
</tr>
<tr>
<td>Hot Deionized (DI) Water</td>
<td>Facility C</td>
<td>&lt;1</td>
<td>Heated (assumed)</td>
<td>Not Recorded</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>Nickel Acetate</td>
<td>Facility B</td>
<td>&lt;1</td>
<td>Heated</td>
<td>Not Recorded</td>
<td>12</td>
</tr>
<tr>
<td>Nickel Acetate</td>
<td>Facility C</td>
<td>&lt;1</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>11</td>
</tr>
<tr>
<td>Nickel Acetate</td>
<td>Facility A</td>
<td>&lt;1</td>
<td>170</td>
<td>Not Recorded</td>
<td>30</td>
</tr>
<tr>
<td>Nickel Acetate</td>
<td>Facility F</td>
<td>ND⁴</td>
<td>Heated</td>
<td>Not Recorded</td>
<td>8</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Tank Type</th>
<th>Facility</th>
<th>Hexavalent Chromium Content (ppm)</th>
<th>Tank Operating Temperature (°F)</th>
<th>Air Sparging</th>
<th>Surface Area (ft²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chem Film</td>
<td>Facility G</td>
<td>2880</td>
<td>Ambient</td>
<td>No</td>
<td>3.75</td>
</tr>
<tr>
<td>Chem Film</td>
<td>Facility C</td>
<td>4</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>Chromate Film</td>
<td>Facility D¹</td>
<td>Not Measured</td>
<td>Ambient</td>
<td>Yes</td>
<td>32</td>
</tr>
<tr>
<td>Alodine Clear</td>
<td>Facility F</td>
<td>300</td>
<td>Ambient</td>
<td>Not Recorded</td>
<td>8</td>
</tr>
<tr>
<td>Gold Dye</td>
<td>Facility C</td>
<td>8</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>Blue Dye</td>
<td>Facility C</td>
<td>2</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>Black Dye</td>
<td>Facility C</td>
<td>&lt;1</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>Red Dye</td>
<td>Facility C</td>
<td>&lt;1</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>Green Dye</td>
<td>Facility C</td>
<td>&lt;1</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>Heated Dye</td>
<td>Facility F</td>
<td>ND²</td>
<td>Heated</td>
<td>Not Recorded</td>
<td>8</td>
</tr>
</tbody>
</table>

¹ Hexavalent chromium air concentration measurement
² Not Detectable
### Table 1-7: Results of Rinse, Cleaner, and Desmutt Tanks Sampling

<table>
<thead>
<tr>
<th>Tank Type</th>
<th>Facility</th>
<th>Hexavalent Chromium Content (ppm)</th>
<th>Tank Operating Temperature (°F)</th>
<th>Air Sparging</th>
<th>Electrolytic</th>
<th>Surface Area (ft²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rinse</td>
<td>Facility G</td>
<td>23,200</td>
<td>Heated</td>
<td>No</td>
<td>No</td>
<td>24</td>
</tr>
<tr>
<td>Rinse</td>
<td>Facility C</td>
<td>4</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>No</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>Rinse</td>
<td>Facility D</td>
<td>2</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>No</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>Rinse</td>
<td>Facility F</td>
<td>&lt;1</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>No</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>Rinse</td>
<td>Facility C</td>
<td>&lt;1</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>No</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>DI Rinse</td>
<td>Facility C</td>
<td>&lt;1</td>
<td>Heated</td>
<td>Not Recorded</td>
<td>No</td>
<td>8</td>
</tr>
<tr>
<td>DI Rinse</td>
<td>Facility C</td>
<td>2,300</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>No</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>DI Rinse</td>
<td>Facility C</td>
<td>19</td>
<td>Not Measured</td>
<td>Yes</td>
<td>No</td>
<td>9</td>
</tr>
<tr>
<td>Cleaner</td>
<td>Facility C</td>
<td>10</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>No</td>
<td>29</td>
</tr>
<tr>
<td>Cleaner</td>
<td>Facility H</td>
<td>6</td>
<td>Heated</td>
<td>Not Specified</td>
<td>Yes</td>
<td>24</td>
</tr>
<tr>
<td>Desmutt</td>
<td>Facility C</td>
<td>0</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>No</td>
<td>3</td>
</tr>
</tbody>
</table>
Table 1-8: Results of Passivation, Etch, Neutralizer, and Stripping Tanks Sampling

<table>
<thead>
<tr>
<th>Tank Type</th>
<th>Facility</th>
<th>Hexavalent Chromium Content (ppm)</th>
<th>Tank Operating Temperature (°F)</th>
<th>Air Sparging</th>
<th>Electrolytic</th>
<th>Surface Area (ft²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chrome Stripping</td>
<td>Facility I</td>
<td>47,400</td>
<td>Not Measured</td>
<td>No</td>
<td>Yes</td>
<td>64</td>
</tr>
<tr>
<td>Chrome Stripping</td>
<td>Facility I</td>
<td>37,000</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>Yes</td>
<td>42</td>
</tr>
<tr>
<td>Chrome Stripping</td>
<td>Facility M</td>
<td>2,300</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>Yes</td>
<td>7.5</td>
</tr>
<tr>
<td>Passivate</td>
<td>Facility F</td>
<td>10,100</td>
<td>Heated</td>
<td>No</td>
<td>No</td>
<td>8</td>
</tr>
<tr>
<td>Passivate</td>
<td>Facility L</td>
<td>7,200</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>No</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>Passivate</td>
<td>Facility L</td>
<td>ND¹</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>No</td>
<td>Not Recorded</td>
</tr>
<tr>
<td>Passivate Rinse</td>
<td>Facility G</td>
<td>210</td>
<td>Not Measured</td>
<td>Yes</td>
<td>No</td>
<td>9</td>
</tr>
<tr>
<td>Etch Tank</td>
<td>Facility C</td>
<td>9</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>Not Recorded</td>
<td>29</td>
</tr>
<tr>
<td>Acid Neutralizer</td>
<td>Facility C</td>
<td>&lt;1</td>
<td>Not Measured</td>
<td>Not Recorded</td>
<td>Not Recorded</td>
<td>6</td>
</tr>
</tbody>
</table>

¹ Not Detectable

Table 1-9: Results for Electrolytic Tier III Tank

<table>
<thead>
<tr>
<th>Facility</th>
<th>Electrolytic Tank Type</th>
<th>Hexavalent Chromium Results (ppm)</th>
<th>Solution Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decorative 1</td>
<td>Stripping</td>
<td>100</td>
<td>Acidic</td>
</tr>
<tr>
<td>Hard 1</td>
<td>Stripping</td>
<td>64,000</td>
<td>Caustic</td>
</tr>
<tr>
<td>Decorative 2</td>
<td>Stripping</td>
<td>7,000</td>
<td>Caustic</td>
</tr>
<tr>
<td>Decorative 3</td>
<td>Stripping</td>
<td>1</td>
<td>Acidic</td>
</tr>
<tr>
<td>Decorative 4</td>
<td>Stripping</td>
<td>110</td>
<td>Caustic</td>
</tr>
<tr>
<td>Hard 2</td>
<td>Stripping</td>
<td>33,000</td>
<td>Caustic</td>
</tr>
<tr>
<td>Decorative 5</td>
<td>Electropolishing</td>
<td>3,000</td>
<td>Caustic</td>
</tr>
<tr>
<td>Decorative 6</td>
<td>Electropolishing</td>
<td>860</td>
<td>Caustic</td>
</tr>
<tr>
<td>Hard 3</td>
<td>Stripping</td>
<td>37,000/76,000</td>
<td>Caustic</td>
</tr>
<tr>
<td>Decorative 7</td>
<td>Electropolishing</td>
<td>3,200</td>
<td>Caustic</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Tank Type</th>
<th>Tank Hexavalent Chromium Content (ppm)</th>
<th>Tank Operating Temperature (°F)</th>
<th>Run</th>
<th>Tank Hexavalent Chromium Emission Concentration (ng/m³)</th>
<th>Tank Hexavalent Chromium Emission Rate (mg/hr)</th>
<th>Tank Hexavalent Chromium Emission Rate per Ft² (mg/hr-ft²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alodine Tank</td>
<td>347</td>
<td>150</td>
<td>1</td>
<td>37.9</td>
<td>0.037</td>
<td>3.75E-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>25.7</td>
<td>0.025</td>
<td>2.53E-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>58.8</td>
<td>0.054</td>
<td>5.40E-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>AVG</td>
<td>40.8</td>
<td>0.039</td>
<td>3.89E-4</td>
</tr>
<tr>
<td>Alodine Tank</td>
<td>333</td>
<td>160</td>
<td>1</td>
<td>72.7</td>
<td>0.083</td>
<td>8.33E-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>51.3</td>
<td>0.058</td>
<td>5.80E-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>134.9</td>
<td>0.156</td>
<td>1.56E-2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>AVG</td>
<td>86.3</td>
<td>0.099</td>
<td>9.92E-3</td>
</tr>
</tbody>
</table>

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.
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.
Lower Concentration Limit (ppm) = 1.92 * 10^{42} * [Operating Temp °F]^{-17.92} – 105.9

Upper Concentration Limit (ppm) = 2 * (1.92 * 10^{42} * [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

<table>
<thead>
<tr>
<th>Temperature (°F)</th>
<th>Tier II Tank Concentration (ppm)</th>
<th>Tier III Tank Concentration (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>140 to &lt;145°F</td>
<td>5,200 to &lt;10,400</td>
<td>≥10,400</td>
</tr>
<tr>
<td>145 to &lt;150°F</td>
<td>2,700 to &lt;5,500</td>
<td>≥5,500</td>
</tr>
<tr>
<td>150 to &lt;155°F</td>
<td>1,400 to &lt;2,900</td>
<td>≥2,900</td>
</tr>
<tr>
<td>155 to &lt;160°F</td>
<td>700 to &lt;1,600</td>
<td>≥1,600</td>
</tr>
<tr>
<td>160 to &lt;165°F</td>
<td>400 to &lt;800</td>
<td>≥800</td>
</tr>
<tr>
<td>165 to &lt;170°F</td>
<td>180 to &lt;400</td>
<td>≥400</td>
</tr>
<tr>
<td>≥170°F</td>
<td>≥100 to &lt;200</td>
<td>≥200</td>
</tr>
</tbody>
</table>

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

- Tier I: Operation of Tanks Within a Building Enclosure, Housekeeping Requirements, Best Management Practices
- Tier II: Tier I Requirements, Building Enclosure Requirements, In-tank Controls, Data logger for temperature gauge, Conditional Provisions for Permanent Total Enclosure
- Tier III: Tier I Requirements, Tier II Requirements, Add-on Pollution Controls, Source Testing, Parameter Monitoring

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.
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**

<table>
<thead>
<tr>
<th>Chemical Fume Suppressant and Manufacturer</th>
<th>Chrome Plating Applications</th>
<th>Stalagmometer Measured Surface Tension (dynes/centimeter)</th>
<th>Tensiometer Measured Surface Tension (dynes/centimeter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fumetrol 21 LF2 Atotech, U.S.A2</td>
<td>Hard plating</td>
<td>&lt; 30</td>
<td>&lt; 27</td>
</tr>
<tr>
<td>Dicolloy CRPF ProCom LLC2</td>
<td>Decorative plating and chromic acid anodizing</td>
<td>&lt; 32</td>
<td>&lt; 29</td>
</tr>
<tr>
<td>HCA - 8.4 Hunter Chemical LLC2</td>
<td>Decorative plating and chromic acid anodizing</td>
<td>&lt; 25</td>
<td>&lt; 22</td>
</tr>
<tr>
<td>HCA - 8.4 Hunter Chemical LLC2</td>
<td>Hard plating</td>
<td>&lt; 33</td>
<td>&lt; 30</td>
</tr>
<tr>
<td>Macuplex STR NPFX MacDermid Enthone Industrial Solutions2</td>
<td>Decorative plating and chromic acid anodizing</td>
<td>&lt; 32</td>
<td>&lt; 30</td>
</tr>
</tbody>
</table>

**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:


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 Sulfo succinate**
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

<table>
<thead>
<tr>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lower metal concentrations</td>
<td>• Differences in color</td>
</tr>
<tr>
<td>• No reduction step</td>
<td>• Higher cost</td>
</tr>
<tr>
<td>• Higher rack densities</td>
<td>• More careful control of plating conditions required</td>
</tr>
<tr>
<td>• Lower current density</td>
<td>• End product is darker and not as shiny</td>
</tr>
<tr>
<td>• Fewer rejects</td>
<td></td>
</tr>
<tr>
<td>• Reduced drag-out</td>
<td></td>
</tr>
<tr>
<td>• No fumes</td>
<td></td>
</tr>
</tbody>
</table>

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 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.
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 closest 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

<table>
<thead>
<tr>
<th>Advantages for Trivalent Chromium Electroplating</th>
<th>Advantages for Hexavalent Chromium Electroplating</th>
<th>Comparable Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lower current density needed</td>
<td>• Plates faster</td>
<td>• Equivalent corrosion protection of plated surface based on Copper Activated Salt Spray (CASS)</td>
</tr>
<tr>
<td>• Can fit more parts on rack</td>
<td>• Better activation inside parts; passivate hard to reach areas</td>
<td>• Comparable cost when accounting for higher cost of trivalent chemistry vs. higher cost of control requirements and treatment of wastewater for hexavalent chromium</td>
</tr>
<tr>
<td>• Less treatment of wastewater needed</td>
<td>• Color is more stable over time</td>
<td></td>
</tr>
<tr>
<td>• Lower scrap factor</td>
<td>• Less expensive chemistry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Less attention to detail required</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 2: SUMMARY OF PROPOSED AMENDED 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)
Chapter 2: Summary of Proposed Amendments to Rule 1469

- HEPA VACUUM (added)
- LOW PRESSURE SPRAY NOZZLE (added)
- MECHANICAL FUME SUPPRESSANT (modified)
- METAL REMOVAL FLUID (added)
- PERFLUOROCTANE 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](image)

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.

<table>
<thead>
<tr>
<th>Temperature (° F)</th>
<th>Tier II Tank Concentration (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 140 to &lt;145</td>
<td>≥ 5,200 to &lt; 10,400</td>
</tr>
<tr>
<td>≥ 145 to &lt;150</td>
<td>≥ 2,700 to &lt; 5,500</td>
</tr>
<tr>
<td>≥ 150 to &lt;155</td>
<td>≥ 1,400 to &lt; 2,900</td>
</tr>
<tr>
<td>≥ 155 to &lt;160</td>
<td>≥ 700 to &lt; 1,600</td>
</tr>
<tr>
<td>≥ 160 to &lt;165</td>
<td>≥ 400 to &lt; 800</td>
</tr>
<tr>
<td>≥ 165 to &lt;170</td>
<td>≥ 180 to &lt; 400</td>
</tr>
<tr>
<td>≥170</td>
<td>≥ 100 to &lt; 200</td>
</tr>
</tbody>
</table>
• 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

<table>
<thead>
<tr>
<th>Temperature (° F)</th>
<th>Tier III Tank Concentration (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 140 to &lt;145</td>
<td>≥ 10,400</td>
</tr>
<tr>
<td>≥ 145 to &lt;150</td>
<td>≥ 5,500</td>
</tr>
<tr>
<td>≥ 150 to &lt;155</td>
<td>≥ 2,900</td>
</tr>
<tr>
<td>≥ 155 to &lt;160</td>
<td>≥ 1,600</td>
</tr>
<tr>
<td>≥ 160 to &lt;165</td>
<td>≥ 800</td>
</tr>
<tr>
<td>≥ 165 to &lt;170</td>
<td>≥ 400</td>
</tr>
<tr>
<td>≥170</td>
<td>≥ 200</td>
</tr>
</tbody>
</table>

  - 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.
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 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.
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.
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-ft², 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.

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.
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 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**

![Flowchart]

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 Polyfluoroalkyl (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.
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 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.
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.
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 (Pm, “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 (Vo) using equation 13.72.7 in the 28th Edition of the *Industrial Ventilation Manual*:

\[ Pm = 1.5 \left( \frac{Vo}{4005} \right)^2 \]
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
CHAPTER 3: IMPACT ASSESSMENT

AFFECTED FACILITIES
EMISSION IMPACTS
CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)
SOCIOECONOMIC IMPACT ASSESSMENT
DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY
   CODE SECTION 40727
COMPARATIVE ANALYSIS
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 from the public relative to the Draft EA, and responses to the comments will be prepared and included in the Final EA. The SCAQMD Governing Board must review the adequacy of the Final EA, including responses to comments, prior to the certification of the Final EA and adoption of the proposed amendments to Rule 1469.

SOCIOECONOMIC IMPACT ASSESSMENT
A Draft Socioeconomic Impact Assessment will be released on or before October 3, 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:
- State – Airborne Control Toxic Measures for Hexavalent Chromium Emissions from Chromium Plating and Chromic Acid Anodizing Facilities (ATCM)

<table>
<thead>
<tr>
<th>Rule Element</th>
<th>PAR 1469</th>
<th>ATCM</th>
<th>NESHAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Requirements</td>
<td>Require operation of a Tier I, Tier II, or Tier III Hexavalent Chromium tank to be in a building enclosure</td>
<td>None Specified</td>
<td>None Specified</td>
</tr>
<tr>
<td>Building Enclosure Requirements for Tier II and Tier III Tanks</td>
<td>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:</td>
<td>None Specified</td>
<td>None Specified</td>
</tr>
<tr>
<td></td>
<td>• Combined area of all enclosure openings shall not exceed 3.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Close or limit openings that are on opposite ends of the building</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Close any enclosure opening that directly faces and opens towards up to two sensitive receptors</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Close all enclosure openings in the roof that are located within 15 feet of Tier II and Tier III Hexavalent Chromium Tanks</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 | • 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 contaminated with hexavalent Chromium | • At least once every 7 days, surfaces within the enclosed storage area, open floor area, walkways around affected tanks contaminated with 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.
- 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 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.
- 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 hazardous waste requirements.
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

| 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 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 | 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 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 | Install drip trays that collect and return any bath solution, contain and return to the tank any bath solution, or collect and treat in an onsite wastewater 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 |
• 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:
  o Install a splash guard at the tank that is free of holes, tears, or openings
  o 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 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 by installing a physical barrier
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
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:
  o A barrier separates those tanks from the compressed air cleaning or drying operations
  o Compressed air cleaning or drying operations are conducted in a permanent total enclosure

| Add-on Air Pollution Control Devices and Emission Standards: Tier III Tank Requirements | Owner or operator of a facility that conducts chromium electroplating or chromic acid anodizing operations shall collect and vent all hexavalent chromium emissions from each Tier III Hexavalent Chromium Tank, excluding | None Specified | None Specified |
chromium electroplating and chromic acid anodizing tanks that meets the following emission limits:
  o For existing facilities, 0.0015 mg/amp-hr, if any tanks that are vented are electrolytic; or
  o For new facilities, 0.0011 mg/amp-hr, if any tanks that are vented are electrolytic; or
  o 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
  o 0.004 mg/hr-ft², 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 PAR 1469 3 - 9 October 2018
<table>
<thead>
<tr>
<th>to an add-on air pollution control device, if the ventilation system has a maximum exhaust rate of greater than 5,000 cfm</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 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).</td>
</tr>
<tr>
<td>• 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</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Add-on Air Pollution Control Devices and Emission Standards: Tier II Tank Requirements</th>
<th>None Specified</th>
<th>None Specified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>• 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.</strong></td>
<td>None Specified</td>
<td>None Specified</td>
</tr>
<tr>
<td><strong>• Alternatively, the owner or operator of a facility may meet the Tier III Tank emission limit requirements</strong></td>
<td>None Specified</td>
<td>None Specified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Add-on Air Pollution Control Devices and Emission</th>
<th>None Specified</th>
<th>None Specified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>• An owner or operator of a facility that conducts chromium electroplating or chromic acid anodizing operations</strong></td>
<td>None Specified</td>
<td>None Specified</td>
</tr>
</tbody>
</table>
### Standards: General

shall operate air pollution control techniques at the applicable minimum hood induced capture velocity.

### Source Test Requirements: Schedule

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Source Test Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Owner or operator shall conduct the initial source test no later than 120 days after approval of the initial source test protocol</td>
<td></td>
</tr>
<tr>
<td>• A source test conducted after January 1, 2015, may be used to demonstrate compliance with the initial source test</td>
<td></td>
</tr>
<tr>
<td>• 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</td>
<td></td>
</tr>
<tr>
<td>• Subsequent source tests are required to be conducted within 84 months of the most recent successful SCAQMD approved source test for facilities permitted for less than or equal to 1,000,000 ampere-hours</td>
<td></td>
</tr>
<tr>
<td>• An owner or operator of facility that elects to meet an emission limit specified in paragraph (h)(2) using</td>
<td></td>
</tr>
<tr>
<td>• 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</td>
<td></td>
</tr>
</tbody>
</table>

None Specified
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).

<table>
<thead>
<tr>
<th>Source Test Requirements: Emission Screening</th>
<th>None Specified</th>
<th>None Specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 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:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Follows a source test protocol previously submitted and approved by the SCAQMD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Consists of one run to evaluate the capture and control of hexavalent chromium emissions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Be representative of operating conditions at the facility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• An emissions screening test of hexavalent chromium for a Tier III Hexavalent Chromium Tank may be conducted as an</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
alternative to complying with the requirements for an initial source tests if:
  o The emissions screening meets the requirements of clauses (k)(3)(A)(i) through (iii);
  o 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)
  o 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:
  o Fails the capture efficiency test(s) specified in the

<table>
<thead>
<tr>
<th>\</th>
<th>\</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>alternative to complying with the requirements for an initial source tests if:</td>
<td>\</td>
<td></td>
</tr>
<tr>
<td>o The emissions screening meets the requirements of clauses (k)(3)(A)(i) through (iii);</td>
<td>\</td>
<td></td>
</tr>
<tr>
<td>o 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)</td>
<td>\</td>
<td></td>
</tr>
<tr>
<td>o 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]</td>
<td>\</td>
<td></td>
</tr>
<tr>
<td>• The owner or operator shall submit to SCAQMD the results of the emission screening within 30 days of receiving the results</td>
<td>\</td>
<td></td>
</tr>
<tr>
<td>• The owner or operator shall conduct a source test using an approved test method within 60 days of conducting an emission screening that:</td>
<td>\</td>
<td></td>
</tr>
<tr>
<td>o Fails the capture efficiency test(s) specified in the</td>
<td>\</td>
<td></td>
</tr>
</tbody>
</table>
source test protocol;
  o Exceeds an emission limit specified in the Permit to Operate;
  o Exceeds an emission standard

<table>
<thead>
<tr>
<th>Source Test Protocol Submittal</th>
<th>None Specified</th>
<th>None Specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 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]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Facility Permitted &gt;20,000,000 Amp-hrs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Initial source test protocol due no later than [180 Days After Date of Adoption]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o 180 days prior to due date of subsequent source test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Facility Permitted &lt;20,000,000 and &gt;1,000,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Initial source test protocol due no later than [365 Days After Date of Adoption]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o 180 days prior to due date of subsequent source test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• For new or modified air pollution control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Techniques after [Date of Adoption]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>• Initial source test protocol due 60 days after initial start-up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 180 days prior to due date of subsequent source test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 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</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capture Efficiency</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• 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 <em>A Manual of Recommended Practice for Design</em> authored by the American Conference of Governmental Industrial Hygienists or alternative design criteria and ventilation velocities approved by the Executive Officer.</td>
<td>None Specified</td>
<td>None Specified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Smoke Test</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• 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</td>
<td>None Specified</td>
<td>None Specified</td>
</tr>
</tbody>
</table>
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.

| 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:  
  o 40 dynes/cm (stalagmometer)  
  o 33 dynes/cm (tensiometer)  
• Has been certified by the Executive Officer based on a certification process conducted by SCAQMD and CARB | • 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:  
  o 40 dynes/cm (stalagmometer)  
  o 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:  
  o Availability of a wetting agent | None Specified | None Specified |
<table>
<thead>
<tr>
<th>Chemical fume suppressant that is certified by the Executive Officer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certification status of any potential wetting agent chemical</td>
</tr>
<tr>
<td>Beginning July 1, 2021, the owner or operator shall only add a certified wetting agent chemical fume suppressant to an electroplating or chromic acid anodizing tank that based on the information in the notice as specified in paragraph (l)(4) and</td>
</tr>
<tr>
<td>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 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</td>
</tr>
<tr>
<td>Chemical fume suppressant</td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>o 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.</td>
</tr>
<tr>
<td>o 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.</td>
</tr>
<tr>
<td>o Owner or operator that fails to phase out the use of hexavalent chromium by July 1, 2022 will be required to cease operation of</td>
</tr>
</tbody>
</table>
the electroplating or chromic acid anodizing until it can meet the emission limits

<table>
<thead>
<tr>
<th>Parameter Monitoring: Pressure Air Flow</th>
<th>The owner or operator shall monitor the operation of the add-on air pollution control device by:</th>
<th>None Specified</th>
<th>None Specified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Installing and maintaining a device to measure the applicable pressures and air flows specified in Table 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Installing each device so that it is accessible and in clear sight of the operation or maintenance personnel;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Maintaining all parameters identified in Table 4 within the range specified in the facility’s SCAQMD Permit to Operate;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 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</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
o 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

<table>
<thead>
<tr>
<th>Parameter Monitoring: Pressure and Air Flow</th>
<th>Add-On Air Pollution Control Device Parameter Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 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:</td>
<td>• Monitoring required of collections slots and push air manifold</td>
</tr>
<tr>
<td>o Push Manifold – Static Pressure</td>
<td>• Acceptable measurements and actions:</td>
</tr>
<tr>
<td>o Collection Manifold/Any Location within the System – Static Pressure/Volumetric Flow Rate</td>
<td>o Collection Slot, &gt; 95% of the</td>
</tr>
<tr>
<td>o Across Each Stage of the Control Device – Differential Pressure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>None Specified</td>
</tr>
<tr>
<td></td>
<td>None Specified</td>
</tr>
</tbody>
</table>

- Continuous pressure drop and inlet velocity monitoring
- Record once a week
- Daily pressure drop and inlet velocity monitoring and recording
<table>
<thead>
<tr>
<th>most recent passing source test or emission screening; or ≥ 2,000 fpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Push Air Manifold, 95-105% compared to the most recent passing source test or emission screening</td>
</tr>
<tr>
<td>o Action required, none</td>
</tr>
</tbody>
</table>

**Repairable measurement and actions:**
- o Collection Slot, 90-95% of the most recent passing source test or emission screening test, or < 2,000 fpm and > 1,800 fpm
- o Push Air Manifold, 90-95% or 105-110% of the most recent passing source test or emission screening test
- o Action required, repair

**Failing Measurement and actions:**
- o Collection Slot, < 90% of the most recent passing source test or emission screening test, or <1,800 fpm
- o Push Air Manifold, > 110% or < 90%
of the most recent passing source test or emission screening test
  o 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:
  o A hot-wire anemometer;
  o A vane anemometer; or
  o A device or method approved by the Executive Officer | None Specified | None Specified |

| Parameter Monitoring: HEPA Filters | Beginning 60 Days after completion of the initial source test, air pollution control | None Specified | None Specified |
devices equipped with HEPA filters shall be:
- Equipped with ports
- Calibrated once every calendar year
- Maintained in accordance with manufacturer specification

<table>
<thead>
<tr>
<th>Parameter Monitoring: Surface Tension</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• 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.</td>
<td>• Monitor and record surface tension of electroplating baths weekly.</td>
<td>• Monitor and record surface tension of electroplating baths once every 40 hours of operation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inspection and Maintenance and Operation and Maintenance Plan</th>
<th>None Specified</th>
<th>None Specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 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</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Tier I, Tier II, and Tier III Hexavalent Chromium Tanks shall comply with the inspection and maintenance requirements in Table 4-2 of Appendix 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Facility’s Operation and Maintenance Plan shall be revised to reflect the incorporation of new inspection and maintenance requirements for a</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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 for further information
  - Causes of the incident
  - Estimated time of repair

<p>| Chromium Electroplating or Chromic Acid | Removed | No person shall sell, supply, offer for sale, or manufacture for sale in California, | None Specified |</p>
<table>
<thead>
<tr>
<th>Anodizing Kit Requirements</th>
<th>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.</th>
</tr>
</thead>
</table>
| **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 equal to 1,000 feet of a sensitive receptor | None Specified | None Specified |
| **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:  
  o Incidences did not occur | None Specified | None Specified |
<table>
<thead>
<tr>
<th>Conditional Requirements for Permanent Total Enclosure: Construction</th>
<th>None Specified</th>
<th>None Specified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner or operator resolved incidences in a timely manner</td>
<td>• Install no later than 12 months after the Permit to Construct</td>
<td></td>
</tr>
<tr>
<td>Implemented specific measures to minimize hexavalent chromium emissions</td>
<td>• Permit to Construct application due 180 days after notification by the Executive Officer if near sensitive receptor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Permit to Construct application due 270 days after notification by the Executive Officer for other facilities</td>
<td></td>
</tr>
<tr>
<td>Hexavalent Chromium Phase-Out</td>
<td>None Specified</td>
<td>None Specified</td>
</tr>
<tr>
<td>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:</td>
<td>• 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:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o A written commitment to eliminate or reduce hexavalent chromium concentrations to below the Tier II or Tier III concentrations;</td>
<td></td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Time Extensions</th>
<th>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:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Complete installation of an add-on air</td>
</tr>
<tr>
<td></td>
<td>None Specified</td>
</tr>
<tr>
<td></td>
<td>None Specified</td>
</tr>
<tr>
<td>pollution control device, implement an approved alternative compliance method, or implement an approved Hexavalent Chromium Phase-Out Plan to meet the requirements; or</td>
<td></td>
</tr>
<tr>
<td>Meet the hexavalent chromium emission limit, phase-out the use of hexavalent chromium, or implement an alternative to a wetting agent chemical fume suppressant;</td>
<td></td>
</tr>
</tbody>
</table>

- 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:
  - The facility name, SCAQMD facility identification number, and the name and phone number of a contact person; |
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>o</td>
<td>A description of the chromium electroplating or chromic acid anodizing tank and the SCAQMD Permit to Operate and tank number;</td>
</tr>
<tr>
<td>o</td>
<td>A description of the emission reduction approach that is being implemented;</td>
</tr>
<tr>
<td>o</td>
<td>The specific provision under subparagraph (h)(4)(C) or paragraph (l)(5) for which a compliance extension is being requested;</td>
</tr>
<tr>
<td>o</td>
<td>The reason(s) a time extension is needed;</td>
</tr>
<tr>
<td>o</td>
<td>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</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>consultants to install equipment; and</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Length of time requested, up to 12 months.</td>
</tr>
<tr>
<td>• The Executive Officer will review the request for the time extension and will approve the time extension if the owner or operator:</td>
</tr>
<tr>
<td>o 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</td>
</tr>
<tr>
<td>o 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.</td>
</tr>
</tbody>
</table>
REFERENCES


Fume Suppressant Fact Sheet. Retrieved from https://www.arb.ca.gov/toxics/chrome/fumesuppressantfactsheet.pdf


Polo, Chen, (October 2002). Report on Nickel and Chromium Emissions from Electroplating Tanks, Version 3.0


PAR 1469  R- 2  October 2018


APPENDIX A: RESPONSE TO COMMENTS
# TABLE OF CONTENTS

1. Metal Finishing Association of Southern California (MFASC) Comment Letter (9/18/17)  
2. Metal Finishing Association of Southern California (MFASC) Comment Letter (10/12/17)  
3. Environmental Multi-Agency Comment Letter (10/25/17)  
4. Industrial Environmental Coalition Orange County Comment Letter (11/8/17)  
5. Aviation Repair Comment Letter (11/17/17)  
6. Metal Finishing Association of Southern California (MFASC) Comment Letter (11/XX/17)  
7. Verne’s Chrome Plating, Inc (12/1/17)  
8. Hixson Metal Finishing Comment Letter (12/1/17)  
9. County of Los Angeles Department of Public Health (Cyrus Rangan) Comment Letter (12/8/17)  
11. RadTech International Comment Letter (12/15/17)  
12. Brite Plating and General Plating Comment Letter (12/15/17)  
13. Robina Suwol Comment Email (12/7/17)  
14. Metal Finishing Association of Southern California (MFASC) Comment Letter (2/2/18)  
15. Valley Todeco, Inc. Comment Letter (2/9/18)  
16. Metal Surfaces Incorporated Comment Letter (2/22/18)  
17. Lisa Lappin Comment Email (2/22/18)  
18. Hixson Metal Finishing Comment Letter (2/27/18)  
20. Metal Surfaces Incorporated Comment Letter (3/1/18)  
21. Hixson Metal Finishing Comment Email (3/8/18)  
   Felipe Aguirre Comment Email (3/15/18)  
22. Universal Metal Plating Comment Email (4/4/18)  
23. Universal Metal Plating Comment Email (4/6/18)  
24. Boeing Comment Email (4/19/18)  
25. Pico Rivera Plating Comment Email (5/2/18)  
26. Robina Suwol Comment Email (7/17/18)  
27. Boeing Comment Email (7/7/18)  
28. AAA Plating and Inspection, Inc. Comment Email (8/8/2018)  
29. Sara Patricia Huezo Comment Email (8/9/18)  
30. Wesley Turnbow Comment Email (8/21/18)  
31. Metal Finishing Association of Southern California (MFASC) Comment Letter (8/23/18)  
32. Del Amo Action Committee Comment Letter (9/4/18)  
33. Environmental Multi-Agency Comment Letter (9/5/18)
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 wipe 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) 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/m³, 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.

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.
(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/m³. 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 anodine 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 or other control measures.

(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.

(5) Passivate, Etch, Neutralizer and Stripping – On page 17, test results were shown for one (1) liquid sample 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.

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 its 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.

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.

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.

(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.

(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.

(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.

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.
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 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 III 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.
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
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.

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
Appendix A: Response to Comments

MFA Comment Letter – AQMD Proposed Amended Rule 1469
October 12, 2017

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.

(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/m³ hexavalent chromium 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.

2.0 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.

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/m². 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

Metal Finishing Association of Southern California

Page 3
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.

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) 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 would 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:

- Nickel Acetate Seal, Hot Water Seal, Teflon Seal
- Chromate Conversion, Dye Tanks
- Cleaner, De-smut Tanks
- Etch, Neutralization, Passivation
- Rinse Tanks

Metal Finishing Association of Southern California
Appendix A: Response to Comments

MFA Comment Letter – AQMD Proposed Amended Rule 1469
October 12, 2017

(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.

(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.

(5) Building Enclosures – Pursuant to PAR 1469 (c), 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.

(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 BMFs 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.

(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...
MFA Comment Letter – AQMD Proposed Amended Rule 1469
October 12, 2017

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.

(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).

(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.

(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.

(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.

(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.

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.
Appendix A: Response to Comments

MFA Comment Letter – AQMD Proposed Amended Rule 1469
October 12, 2017

(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.

(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.

(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 roof venting. 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 I, 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.

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 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.

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 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 an 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.

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.

Respectfully,
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
Appendix A: Response to Comments Draft Staff Report

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 Sermo
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 Moreta
Pastor
Los Angeles, CA

San Pedro & Peninsula Homeowners Coalition
Dr. John G. Miller, MD
President
San Pedro, CA
Appendix A: Response to Comments

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.
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.

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.

IEC/OC PO BOX 2211, COSTA MESA, CA 92628 PH: 657.210.2432
EMAIL: INFO@IECOC.NET 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.

3. **Comment 3** – The definition of a Tier II Tank was established using insufficient data. Page 1-22 of the Preliminary Draft 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.

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.*
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 <nfufijiwara@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:

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.
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.

It is unnecessary 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 unnecessary 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.

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?

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.
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
Appendix A: Response to Comments Draft Staff Report

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 as 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.
November XX, 2017

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) Chrome Tank Test Data - The 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.

P.O. Box 6547, Burbank, CA 91510-6547 (818) 238-9590 www.mfaca.org
Wayne Nasti, SCAQMD - Proposed Amended Rule 1469  
November XX, 2017

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.

(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.

(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/m³ as a fence line (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/m³, which were subsequently reduced to 0.25 to 0.40 ng/m³. The Staff Report indicates the Long Beach facility had average hexavalent chrome readings from 0.4 to 0.9 ng/m³, which are below the enforcement threshold of 1 ng/m³. As we have noted on numerous occasions, the MFA continues to remain concerned about the use
Wayne Nastri, SCAQMD - Proposed Amended Rule 1469
November XX, 2017

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/m³ 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.

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, chronic acid anodizing tanks and associated chrome tanks. Based on our understanding, those facilities which do not operate chromium electroplating or chronic 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) 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.”

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”:

“...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;

Metal Finishers Association of Southern California

Page 3
Appendix A: Response to Comments Draft Staff Report

Wayne Nastri, SCAQMD - Proposed Amended Rule 1469
November XX, 2017

viii. The relocation of applicable tanks within a facility.
ix. Installing or upgrading pressure gauges, flowmeters or other required monitoring
devices;
ix. 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:

**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:

**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.
Wayne Nasti, SCAQMD - Proposed Amended Rule 1469
November XX, 2017

(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.

(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.

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).

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.

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.

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.

---

Metal Finishers Association of Southern California

Page 5
Appendix A: Response to Comments

Wayne Nastri, SCAQMD - Proposed Amended Rule 1469
November XX, 2017

(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;

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 requirements, 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).

(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.

(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-resetable 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.

(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
Wayne Nastri, SCAQMD - Proposed Amended Rule 1469
November XX, 2017

to its vagueness, the requirement would be subject to wide interpretation by AQMD enforcement and likely lead to NOVs.

(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.

(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.

(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.

(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.

(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 I, 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.

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)

Metal Finishers Association of Southern California
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/m³ 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.

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.

7-1

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.

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.

Ronald L Verne
Verne's Chrome Plating, Inc.

[Signature]
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@hmigroup.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

Supporting Flight Excellence

The data attached/enclosed may contain information (including technology and technical data) which is subject to the U.S. International Traffic in Arms Regulations (ITAR) or Export Administration Regulations (EAR). This information may not be exported, released, or disclosed to foreign persons either inside or outside the United States without first obtaining the proper U.S. export license or written authorization. The information and articles described herein may either be patented or proprietary, and the copying or reproduction thereof is prohibited without Hixson Metal Finishing's prior written consent. In addition, the information contained in this communication may also be privileged and confidential, and is intended only for the use of the recipient(s) named above. You are hereby notified that any dissemination, distribution, or copying of this communication, or any of its contents, to any other party, is strictly prohibited. If you have received this communication in error, please return it to the sender immediately and delete the original message and any copy of it from your computer system.*
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 lead to inspectors widening the scope to the entire facility or even construction areas. This has been addressed in the revised rule.

(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.

(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 has been clarified to include a PTE.

(c)(62) – Weekly – Can weekly be changed to once per calendar week? This has been changed to calendar week.

(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.

(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.

(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.

(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.

(f)(1) – Storage – I think the intent of this section was to make sure that the chromic acid powerflake 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 an enclosed storage area. This could, technically, allow an inspector to expand the scope of the rule to many other processes.
(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 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.

(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

(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?

(h)(4)(A)(i)(ii) – mg/hr – This is still to be determined. Any idea on the requirement? — Added a requirement of 0.2 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.

(h)(4)(B)(i) – The section has a reference back to the same section, I think this is a typo and should reference back to (h)(4)(B)(ii)?

(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?

(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”?

(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 an initial source test?

(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.

(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
Appendix A: Response to Comments

(k)(3)(C)(iii)(C) – These emission standards have not yet been determined. Please see section (h)(4)(A)(iii) above.

(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?

(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?

(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.

(n)(2) – Indicates mechanical fume suppressants and refers to table 4-2 of appendix 4. There is no requirement in the table for polyballs. There is a requirement in section (o)(4)(E) of the rule and this requires daily inspection.

(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?

Appendix 3 – Ongoing Compliance Report – Will a new report be provided by AQMD? Yes

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 thought this 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?

Appendix 8, section 3 – Testing 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.

Appendix 1 – 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.
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”.
Appendix A: Response to Comments

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.
Table 4-2 in Appendix 4 has been modified to require the tank to be tested during typical operating conditions.

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

Staff does not make a recommendation for the smoke device to use during smoke tests.
December 8, 2017

Wayne Nasti, 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. Nasti,

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/m³. 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
Appendix A: Response to Comments Draft Staff Report

November 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:

- Consistent with recent European Union legislation, ban hexavalent chromium for decorative purposes.
- Periodic fenceline air monitoring to facilitate continued assessment of ambient hexavalent chromium emissions across Los Angeles County.
- 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.
- 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.
- Establish a mandatory consultative process with the California Division of Occupational Safety and Health’s (Cal/OSHA) to ensure adequate worker protection.

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.

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)
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:


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.
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.

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. 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.

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:

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.

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.

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).

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
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.

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. 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

---

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.

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."

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.

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,

[Signature]
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.
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.
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.

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:alanick@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. 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
alanick@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 <robinazuwol@earthlink.net>
Date: 12/7/17 2:22 PM (GMT-8:00)
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 if the fires which makes traveling challenging.

Below, is the link to the Madrid Statement that I hope can be distributed to all of the 1469 Workshop participants.

I hope that you can share our deep concerns with those today that we are extremely concerned about the Fume Suppressants 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.

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.

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.

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.
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.

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.calsafe.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 in this message, or any attachment, that have arisen as a result of e-mail transmission. If verification is required, please request a hard-copy version.
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.
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 those 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) PFOS Alternatives – 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
such non-PFOS suppressants, such as, fluoroelotemol alcohol (FTOH), fluoroelotemol sulfoinate (FTSA), perfluoroeloxamic 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.

(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 chromium 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.

(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).

<p>| Table 1-5: SCAQMD Sampling of Various Temperatures |
|-----------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|</p>
<table>
<thead>
<tr>
<th>Tank Type</th>
<th>Tank Hexavalent Chromium Content (ppm)</th>
<th>Tank Operating Temperature (°F)</th>
<th>Run</th>
<th>Tank Hexavalent Chromium Emission Concentration (ng/m³)</th>
<th>Tank Hexavalent Chromium Emission Rate (ng/hr)</th>
<th>Tank Hexavalent Chromium Emission Rate per ft² (ng/hr-ft²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alodine Tank</td>
<td>347</td>
<td>150</td>
<td>1</td>
<td>37.9</td>
<td>0.037</td>
<td>1.75E-3</td>
</tr>
<tr>
<td>Alodine Tank</td>
<td>347</td>
<td>150</td>
<td>2</td>
<td>25.7</td>
<td>0.025</td>
<td>2.53E-3</td>
</tr>
<tr>
<td>Alodine Tank</td>
<td>347</td>
<td>150</td>
<td>3</td>
<td>58.8</td>
<td>0.054</td>
<td>5.40E-3</td>
</tr>
<tr>
<td>AVG</td>
<td>40.8</td>
<td>0.039</td>
<td>3.98E-4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alodine Tank</td>
<td>333</td>
<td>160</td>
<td>1</td>
<td>72.7</td>
<td>0.083</td>
<td>8.33E-3</td>
</tr>
<tr>
<td>Alodine Tank</td>
<td>333</td>
<td>160</td>
<td>2</td>
<td>51.3</td>
<td>0.058</td>
<td>5.80E-3</td>
</tr>
<tr>
<td>Alodine Tank</td>
<td>333</td>
<td>160</td>
<td>3</td>
<td>134.9</td>
<td>0.156</td>
<td>1.56E-2</td>
</tr>
<tr>
<td>AVG</td>
<td>86.3</td>
<td>0.099</td>
<td>9.92E-3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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
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.

Additionally, even though the SCAQMD proposed some revisions for larger airflow 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.

(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).

(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/m³ 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...
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.

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.

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.

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.

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.

(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
Wayne Nastri, SCAQMD - Proposed Amended Rule 1469
January 31, 2018

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.

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.

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.

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.

12. **Surface Tension Testing** – PAR 1469 (c)(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.

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. **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.

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.
Wayne Nastri, SCAQMD - Proposed Amended Rule 1469
January 31, 2018

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,

[Signature]
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/m³ 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.
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 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.

SCAQMD has previously considered wet grinding and maintenance grinding in its development and adoption of Rule 1430 – Control of Emissions from Metal Forging 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.

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,

[Signature]

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.
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 100 tanks & is totally isolated from the Main Shop.

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.
We therefore suggest that (e) (5) be deleted or applicable only to roof exhausts within 15’ - 20’ of Tier II chrome tank.

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.

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.

   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 of our comments, please call me.

Sincerely,

[Signature]

Sam R Bell /Charles K Bell
Metal Surfaces, Inc.
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:ljlutting@gmail.com]
Sent: Thursday, February 22, 2018 11:17 PM
To: Wayne Nastri <wnastri@aqlmg.gov>; Susan Nakamura <SNakamura@aqlmg.gov>; Philip Fine <pfine@aqlmg.gov>; Dr. Joseph K. Lyou <jlyou@aqlmg.gov>; Rachel Uranga <furanga@scng.com>; Tony Barboza <tony.barboza@latimes.com>; Jane Williams <dcapjane@aol.com>; Clerk of Board <Front_PC@aqlmg.gov>; Liza Tucker <liza@consumerwatchdog.org>; Laurie Guillen <lauriegullen1967@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@aqlmg.gov>; Rebecca Plevin <rebecca.blevin@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 hexavalent 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!

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.

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.

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

The data attached/enclosed may contain information (including technology and technical data) which is subject to the U.S. International Traffic in Arms Regulations (ITAR) or Export Administration Regulations (EAR). This information may not be exported, released, or disclosed to foreign persons either inside or outside the United States without first obtaining the proper U.S. export license or written authorization. The information and articles described herein may either be patented or proprietary, and the copying or reproduction thereof is prohibited without Hixson Metal Finishing’s prior written consent. In addition, the information contained in this communication may also be privileged and confidential, and is intended only for the use of the recipient(s) named above. You are hereby notified that any dissemination, distribution, or copying of this communication, or any of its contents, to any other party, is strictly prohibited. If you have received this communication in error, please return it to the sender immediately and delete the original message and any copy of it from your computer system.*
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 these should be exempted if used or located within a PTE and not be considered Enclosure Openings.

(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.

(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.

(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).

(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.

(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.

(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.

(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.

(e) (5) – Same as (e) (4) above

(e) (8) – This indicates prior to initial startup. What if the line is already in operation?

(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
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.

(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.

(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).

(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.

(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”

(i)(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.
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:

<table>
<thead>
<tr>
<th>Temperature (° F)</th>
<th>Tier II Tank Hexavalent Chromium Concentration (ppm)</th>
<th>Tier III Tank Hexavalent Chromium Concentration (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>140 to &lt;145° F</td>
<td>5,200 to &lt;10,400</td>
<td>≥10,400</td>
</tr>
<tr>
<td>145 to &lt;150° F</td>
<td>2,700 to &lt;5,500</td>
<td>≥5,500</td>
</tr>
<tr>
<td>150 to &lt;155° F</td>
<td>1,400 to &lt;2,900</td>
<td>≥2,900</td>
</tr>
<tr>
<td>155 to &lt;160° F</td>
<td>700 to &lt;1,600</td>
<td>≥1,600</td>
</tr>
<tr>
<td>160 to &lt;165° F</td>
<td>400 to &lt;800</td>
<td>≥800</td>
</tr>
<tr>
<td>165 to &lt;170° F</td>
<td>180 to &lt;400</td>
<td>≥400</td>
</tr>
<tr>
<td>≥170° F</td>
<td>≥100 to &lt;200</td>
<td>≥200</td>
</tr>
</tbody>
</table>

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
Appendix A: Response to Comments Draft Staff Report

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.
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 Chronic 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.
  - (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.
  - (g)(2)(B): With respect to low pressure water nozzles, sites may have to purchase and install new equipment to meet requirement.
  - (g)(3): New labels for each tank will be required to reflect additional information that is specified.
  - (g)(7): Installation of barriers to separate air cleaning or drying operations from process tank lines.
  - (n): Complete revision of existing Operation & Maintenance Plans to reflect new rule requirements.
  - 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.

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.
• 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”.
• 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.

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.
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.

METAL SURFACES, INC. 6060 Shell St., Bell Gardens, CA 90201-8297. Mail: PO Box 8001, Bell Gardens, CA 90202-8001.
Tel: (909)-827-1331, Fax (909)-827-0922 www.metalisurfaces.com
Eugene Kang  
South Coast Air Quality Management 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)
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 Kanq
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

The data attached/enclosed may contain information (including technology and technical data) which is subject to the U.S. International Traffic in Arms Regulations (ITAR) or Export Administration Regulations (EAR). This information may not be exported, released, or disclosed to foreign persons either inside or outside the United States without first obtaining the proper U.S. export license or written authorization. The information and articles described herein may either be patented or proprietary, and the copying or reproduction thereof is prohibited without Hixson Metal Finishing’s prior written consent. In addition, the information contained in this communication may also be privileged and confidential, and is intended only for the use of the recipient(s) named above. You are hereby notified that any dissemination, distribution, or copying of this communication, or any of its contents, to any other party, is strictly prohibited. If you have received this communication in error, please return it to the sender immediately and delete the original message and any copy of it from your computer system.*
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?

(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.

(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.

(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.

(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.

(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.

(h)[6] – Ventilation Design - Can the statement “or as approved by the executive officer” be added at the end

(k)[2](c) – This refers to appendix 10. I think it should be appendix 9

(k)[6](A)(i) – Can we add “or as approved by the executive officer” at the end

Appendix 2, line 16 – The 5% allowance should be noted if the compliance status report covers a PTE.
Appendix A: Response to Comments Draft Staff Report

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.
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.
   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.
   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?

Will hex chrome eventually be phased out in Southern California?

Will it matter if a decorative plating shop have a permanent total enclosure to phase out hex chrome?

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?

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.
Hello Neil

Just another question about what makes the reverse strip tank a tier 3 chrome tank?

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.

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.

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:robinasuwo@gmail.com]
Sent: Tuesday, July 17, 2018 11:31 AM
To: Neil Fujiwara <nfujiwara@aqmd.gov>; Susan Nakamura
<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.

Warm Regards,

Robina

Robina Suwel
Executive Director
California Safe Schools
818.785.5515 office
818.261.7965 cell
www.calisafe.org<http://www.calisafe.org>
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:
  
  “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.

- (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?

- (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.

- (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.

- 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.

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?

Thanks.

Brian Ward
AAA Plating and Inspection, Inc.
(310)637-1066

On Wed, 08 Aug 2018 13:53:16 -0700, Neil Fujiwara <nfufjiwara@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
> > s/1469/draft-par-1469-staff-report_30-day-final_8-2018_complete.pdf?sf
> > vrsn=8> Revised PAR 1469 Draft Socioeconomic Impact Assessment
> > 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
> > nfufjiwara@aqmd.gov<mailto:nfufjiwara@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.

Regards,
Sara Patricia Huez
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 <wtturnbow@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. 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.

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.
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

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).
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.

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
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.

- 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. The figure of $23/cfm also matched the figure obtained by SCAQMD staff from an experienced Southern California

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.
installer/vendor and was very close to the figure of $22.62/\text{cfm}$ 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 $23/\text{cfm}$ and a system of between 5,000 and 10,000 cfm costs only $17/\text{cfm}$, 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/\text{cfm} = $115,000 while 6,500 cfm x $17/\text{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 $14/\text{cfm}$ would cost less than a 10,000 cfm system (at $17/\text{cfm}$).

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:

- 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 $2^{0.7} (=1.02)$ or $2^{0.8} (=1.74)$. If a 5,000 cfm system costs $115,000 ($23/\text{cfm}$), then a 10,000 cfm system would be estimated to cost $187,000 ($18.70/\text{cfm}$) using the 0.7 exponent or $200,100 ($20.10/\text{cfm}$) 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 they have misinterpreted the CARB estimates. CARB estimated
$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.

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 cfm/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 airflow. 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 airflow at the facility rather than to the airflow 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).

<table>
<thead>
<tr>
<th>APCD system size (cfm)</th>
<th>Capital cost/cfm</th>
<th>Annual O&amp;M cost relative to capital cost</th>
<th>Resulting estimated O&amp;M cost/cfm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 5,000</td>
<td>$23</td>
<td>18%</td>
<td>$4.14</td>
</tr>
<tr>
<td>5,001 to 10,000</td>
<td>$17</td>
<td>18%</td>
<td>$3.06</td>
</tr>
<tr>
<td>10,001 to 20,000</td>
<td>$14</td>
<td>18%</td>
<td>$2.52</td>
</tr>
</tbody>
</table>

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.
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 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 ft² and the other by about 100 ft² 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.

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 all the openings on one of the two opposing walls 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 closed 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.

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
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.

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.

  - 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:
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.

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 line 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.

- 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
- 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.
### Appendix A: Response to Comments Draft Staff Report

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost</th>
<th>Source</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>$100,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital</td>
<td>$20,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>$80,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$100,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow Pressure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sprayer Guards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gaskets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Estimated Costs to Meet Par 1469 Spray Rinsing Requirements

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost</th>
<th>Source</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>$100,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital</td>
<td>$20,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>$80,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$100,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow Pressure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sprayer Guards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gaskets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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.

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:
• 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.

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 electropolishing 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 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.

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.
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.

- 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
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:

- 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:
• 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.

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.

- 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.

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.\(^3\)

\(^3\) 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.
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

- 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.

---

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. 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.

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).
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.

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. 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.
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.

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.)
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. 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.

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

---

Footnote:

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.
determine the facility’s PAR 1469 compliance costs. 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.

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.
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 Beroulli 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:

\[
\text{High scenario compliance cost at large hard chrome facility} = \$5,336/\text{yr} + (\$25,736/\text{yr}) \times (\# \text{Tier III tanks})
\]

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.
Number and % of Large Hard Chrome Facilities With Compliance Costs Exceeding 3% of Revenues
High Cost Scenario

<table>
<thead>
<tr>
<th>Revenues for Hard (Large) Facilities</th>
<th>Probability of this revenue level</th>
<th>Annual Cost if at 3% of Revenues</th>
<th>Minimum # of tanks req'd to yield this cost</th>
<th>Minimum # of tanks req'd to yield this cost</th>
<th>Probability of this # of tanks or more for this facility</th>
<th>Joint probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>$45,845,045</td>
<td>0.0556</td>
<td>$1,375,351</td>
<td>53.23</td>
<td>54</td>
<td>0</td>
<td>0.0000</td>
</tr>
<tr>
<td>$7,736,964</td>
<td>0.0556</td>
<td>$232,109</td>
<td>8.81</td>
<td>9</td>
<td>0</td>
<td>0.0000</td>
</tr>
<tr>
<td>$6,863,936</td>
<td>0.0556</td>
<td>$205,918</td>
<td>7.79</td>
<td>8</td>
<td>0</td>
<td>0.0000</td>
</tr>
<tr>
<td>$4,511,352</td>
<td>0.0556</td>
<td>$135,341</td>
<td>5.05</td>
<td>6</td>
<td>0</td>
<td>0.0002</td>
</tr>
<tr>
<td>$4,210,246</td>
<td>0.0556</td>
<td>$126,307</td>
<td>4.70</td>
<td>5</td>
<td>0</td>
<td>0.0019</td>
</tr>
<tr>
<td>$3,851,839</td>
<td>0.0556</td>
<td>$115,555</td>
<td>4.28</td>
<td>5</td>
<td>0</td>
<td>0.0019</td>
</tr>
<tr>
<td>$3,271,441</td>
<td>0.0556</td>
<td>$98,143</td>
<td>3.62</td>
<td>4</td>
<td>0</td>
<td>0.0126</td>
</tr>
<tr>
<td>$3,531,073</td>
<td>0.0556</td>
<td>$105,932</td>
<td>3.93</td>
<td>4</td>
<td>0</td>
<td>0.0126</td>
</tr>
<tr>
<td>$3,202,736</td>
<td>0.0556</td>
<td>$96,082</td>
<td>3.53</td>
<td>4</td>
<td>0</td>
<td>0.0126</td>
</tr>
<tr>
<td>$2,000,000</td>
<td>0.0556</td>
<td>$60,000</td>
<td>2.12</td>
<td>3</td>
<td>0</td>
<td>0.0650</td>
</tr>
<tr>
<td>$1,774,633</td>
<td>0.0556</td>
<td>$53,239</td>
<td>1.86</td>
<td>2</td>
<td>0.2431</td>
<td>0.0135</td>
</tr>
<tr>
<td>$1,412,912</td>
<td>0.0556</td>
<td>$42,387</td>
<td>1.44</td>
<td>2</td>
<td>0.2431</td>
<td>0.0135</td>
</tr>
<tr>
<td>$896,802</td>
<td>0.0556</td>
<td>$26,904</td>
<td>0.84</td>
<td>1</td>
<td>0.6215</td>
<td>0.0345</td>
</tr>
<tr>
<td>$775,000</td>
<td>0.0556</td>
<td>$23,250</td>
<td>0.70</td>
<td>1</td>
<td>0.6215</td>
<td>0.0345</td>
</tr>
<tr>
<td>$700,000</td>
<td>0.0556</td>
<td>$21,000</td>
<td>0.61</td>
<td>1</td>
<td>0.6215</td>
<td>0.0345</td>
</tr>
<tr>
<td>$511,726</td>
<td>0.0556</td>
<td>$15,352</td>
<td>0.39</td>
<td>1</td>
<td>0.6215</td>
<td>0.0345</td>
</tr>
<tr>
<td>$500,000</td>
<td>0.0556</td>
<td>$15,000</td>
<td>0.36</td>
<td>1</td>
<td>0.6215</td>
<td>0.0345</td>
</tr>
<tr>
<td>$216,278</td>
<td>0.0556</td>
<td>$6,488</td>
<td>0.04</td>
<td>1</td>
<td>0.6215</td>
<td>0.0345</td>
</tr>
</tbody>
</table>

Summed probability: 0.2401
Expected # Facilities: 4.3222
Percent of Facilities: 24.0%

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 $6,488/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
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.

<table>
<thead>
<tr>
<th>Potential Closures Among Large Hard Chrome Facilities Due to PAR 1469 After Consideration of Variability Across Facilities in Revenues and Compliance Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of facilities with costs &gt; 3% of revenues – threatened closures</td>
</tr>
<tr>
<td>Percentage of facilities with costs &gt; 5% of revenues – likely closures</td>
</tr>
<tr>
<td>Percentage of facilities with costs &gt; 5% of revenues – likely closures</td>
</tr>
</tbody>
</table>

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
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, 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?

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.

31-9

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.
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
Appendix A: Response to Comments Draft Staff Report

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)

<table>
<thead>
<tr>
<th>Category</th>
<th>Average Facility Annual Cost (Low Cost Scenario - High Cost scenario)</th>
<th>Range of Facility Annual Cost (Min - Max)</th>
<th>Average Cost Impacts (Low Cost scenario - High Cost Scenario)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anodizing (Medium)</td>
<td>$55,000 - $90,000</td>
<td>$59,094 - $97,154</td>
<td>5.4% - 8.8%</td>
</tr>
<tr>
<td>Anodizing (Small)</td>
<td>$44,000 - $65,000</td>
<td>$43,854 - $65,531</td>
<td>5.6% - 8.4%</td>
</tr>
<tr>
<td>Decorative (Large)</td>
<td>$3,000 - $3,000</td>
<td>$3,181 - $3,245</td>
<td>2.0% - 2.0%</td>
</tr>
<tr>
<td>Decorative (Medium)</td>
<td>$16,000 - $24,000</td>
<td>$15,514 - $23,970</td>
<td>7.1% - 11.0%</td>
</tr>
<tr>
<td>Decorative (Other)</td>
<td>$3,000 - $3,000</td>
<td>$3,038 - $3,108</td>
<td>3.0% - 3.0%</td>
</tr>
<tr>
<td>Decorative (Small)</td>
<td>$12,000 - $26,000</td>
<td>$12,118 - $26,482</td>
<td>3.8% - 8.3%</td>
</tr>
<tr>
<td>Hard (Large)</td>
<td>$22,000 - $30,000</td>
<td>$21,542 - $29,642</td>
<td>2.3% - 3.1%</td>
</tr>
<tr>
<td>Hard (Medium)</td>
<td>$7,000 - $7,000</td>
<td>$6,201 - $6,253</td>
<td>1.3% - 1.3%</td>
</tr>
<tr>
<td>Hard (Small)</td>
<td>$2,000 - $4,000</td>
<td>$1,102 - $4,109</td>
<td>0.2% - 0.3%</td>
</tr>
<tr>
<td>Trivalent Other</td>
<td>$0 - $0</td>
<td>$226 - $226</td>
<td>0.0% - 0.0%</td>
</tr>
<tr>
<td>Total</td>
<td>$22,000 - $36,000</td>
<td>$226 - $97,154</td>
<td>3.4% - 6.0%</td>
</tr>
</tbody>
</table>
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 outlier 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)

<table>
<thead>
<tr>
<th>Category</th>
<th>Average Facility Annual Cost (Low Cost Scenario - High Cost scenario)</th>
<th>Range of Facility Annual Cost (Min - Max)</th>
<th>Average Cost Impacts (Low Cost scenario - High Cost Scenario)</th>
<th>Revised Average Cost Impacts (Low Cost scenario - High Cost Scenario)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anodizing (Medium)</td>
<td>$55,000 - $90,000</td>
<td>$59,094 - $97,154</td>
<td>5.4% - 8.8%</td>
<td></td>
</tr>
<tr>
<td>Anodizing (Small)</td>
<td>$44,000 - $65,000</td>
<td>$43,854 - $65,531</td>
<td>5.6% - 8.4%</td>
<td>2.1% - 3.2%</td>
</tr>
<tr>
<td>Decorative (Large)</td>
<td>$3,000 - $3,000</td>
<td>$3,181 - $3,245</td>
<td>2.0% - 2.0%</td>
<td>2.0% - 2.0%</td>
</tr>
<tr>
<td>Decorative (Medium)</td>
<td>$16,000 - $24,000</td>
<td>$15,514 - $23,970</td>
<td>7.1% - 11.0%</td>
<td>2.2% - 3.4%</td>
</tr>
<tr>
<td>Decorative (Other)</td>
<td>$3,000 - $3,000</td>
<td>$3,038 - $3,108</td>
<td>3.0% - 3.0%</td>
<td>3.0% - 3.1%</td>
</tr>
<tr>
<td>Decorative (Small)</td>
<td>$12,000 - $26,000</td>
<td>$12,118 - $26,482</td>
<td>3.8% - 8.3%</td>
<td>1.5% - 5.7%</td>
</tr>
<tr>
<td>Hard (Large)</td>
<td>$22,000 - $30,000</td>
<td>$21,542 - $29,642</td>
<td>2.3% - 3.1%</td>
<td>2.3% - 3.1%</td>
</tr>
<tr>
<td>Hard (Medium)</td>
<td>$7,000 - $7,000</td>
<td>$6,201 - $6,253</td>
<td>1.3% - 1.3%</td>
<td>1.3% - 1.3%</td>
</tr>
<tr>
<td>Hard (Small)</td>
<td>$2,000 - $4,000</td>
<td>$1,102 - $4,109</td>
<td>0.2% - 0.3%</td>
<td>0.2% - 0.3%</td>
</tr>
<tr>
<td>Trivalent Other</td>
<td>$0 - $0</td>
<td>$226 - $226</td>
<td>0.0% - 0.0%</td>
<td>0.0% - 0.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$22,000 - $36,000</strong></td>
<td><strong>$226 - $97,154</strong></td>
<td><strong>3.4% - 6.0%</strong></td>
<td><strong>1.7% - 3.7%</strong></td>
</tr>
</tbody>
</table>

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 Angeles

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 ensure 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.

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 349, Rosamond, California 93560
Office: 661-250-7144
Robina Suwel, 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”. The draft rule is replete with alternative options that undermine essential rule requirements. The rule continues to rely heavily on chemical flame 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.

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.

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.

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.

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
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.

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.

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.

Cynthia Babich
Director
Del Amo Action 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 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 specifies 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 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.  
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.  
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.  
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?  
5) The rule is inconsistent in terms of measurements. For example, in some instances feet are used to measure distances and in other meters.  
6) Under this rule the facilities appear to be without consistent thorough oversight to ensure emission are reduced and ultimately eliminated  
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.

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.
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 10:26 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.

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
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.

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.

Respectfully,
Appendix A: Response to Comments Draft Staff Report

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 Suwel, 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 Horio, 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
Anabel Romero Chavez, Board Member
Wilmington, CA

Respectfully,

Robina Suwol
Executive Director, California Safe Schools
Los Angeles, CA

Jane Williams, Executive Director
California Communities Against Toxics
Rosamond, 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.