Working Group Meeting #1

Proposed Amended Rule (PAR) 1426 – Emissions from Metal Finishing Operations

South Coast AQMD

June 24, 2020

Zoom meeting link:
https://scaqmd.zoom.us/j/99932329066
Join via teleconference:
Dial-in Number: (669) 900-6833
Meeting ID: 999 3232 9066

Agenda

- Background on metal finishing
- Findings from 2018 amendments to Rule 1469
- Approach of Proposed Amended Rule 1426
- Rule development process
- Next steps: Information gathering

Meeting Information

- South Coast AQMD acknowledges the challenges to businesses and stakeholders due to COVID-19
- To ensure safe social distancing, Working Group meetings will be held via Zoom or a call-in option is also available
- Although it is a different format, staff will take the time to listen to all stakeholder comments
- In addition to Working Group meetings, staff is available for individual meetings

Background on Metal Finishing

Metal Finishing Industry

- Metal finishing is the surface treatment of a metal substrate to give it desired characteristics (e.g. anti-corrosion, durability, adhesion)
- Metal finishing operations support many industries:
  - Home, kitchen, and bath fixtures
  - Machinery and industrial equipment
  - Aerospace (commercial and military)
- Metal finishing includes metal plating and anodizing
  - Examples of metal plating processes include nickel, copper, zinc, and chromium electroplating
  - Examples of processes involved in anodizing include sealing and passivation

Key South Coast AQMD Rules Affecting Metal Finishing Operations

Rule 1469

Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

- Applies to facility performing chromium electroplating or chromic acid anodizing operations
- Reduces hexavalent chromium emissions

Rule 1426

Emissions from Metal Finishing Operations

- Applies to facility performing chromium, nickel, cadmium, lead, or copper electroplating or chromic acid anodizing operations
- Reduces metal toxic air contaminant emissions

Rule 1469 Key Changes

Initial Adoption

Amendments

1998

- Incorporated requirements from Rule 1169
- Reduced emission limits
- Allowed use of chemical fume suppressants
- Improved compliance verification

2003

- Reduced emission limits
- Limited air sparging
- Required training of operators

2008

- Reduced emission limits
- Required initial source testing
- Amended to be consistent with CARB chrome plating requirements

2018

- Required controls for uncontrolled tanks
- Verified operation of add-on controls
- Limited cross-draft conditions
- Evaluated chemical fume suppressants
- Amended to be consistent with NESHAP

Rule 1426 General Information

- Adopted on May 2, 2003 – developed alongside Rule 1469
- Address broad range of metal toxic air contaminant (TAC) emissions for electrolytic tank operations found at a wide range of industries
- Hexavalent chromium, nickel, lead, cadmium and copper are metal TACs, a subgroup of all TACs
- Exposure to metal TACs have varying health effects
  - Cancer and non-cancer
  - Non-cancer health effects can be short-term (acute) and long-term (chronic) exposure
- Increased exposure to metal TACs may increase the chances of experiencing one or more negative health effects

Rule 1426 Overview

Applicability

Facilities performing chromium, nickel, cadmium, lead or copper electroplating, or chromic acid anodizing

Requirements

Compliance reports

Air sparging restrictions with chromic acid tanks

Housekeeping

Inspections and Maintenance

Manufacturer recommendation otherwise once a quarter

Recordkeeping

Amp-hr records and housekeeping

Exemptions

Rule 1402 facilities who submitted process and tank information exempt from compliance report

Findings from 2018 Amendments to Rule 1469

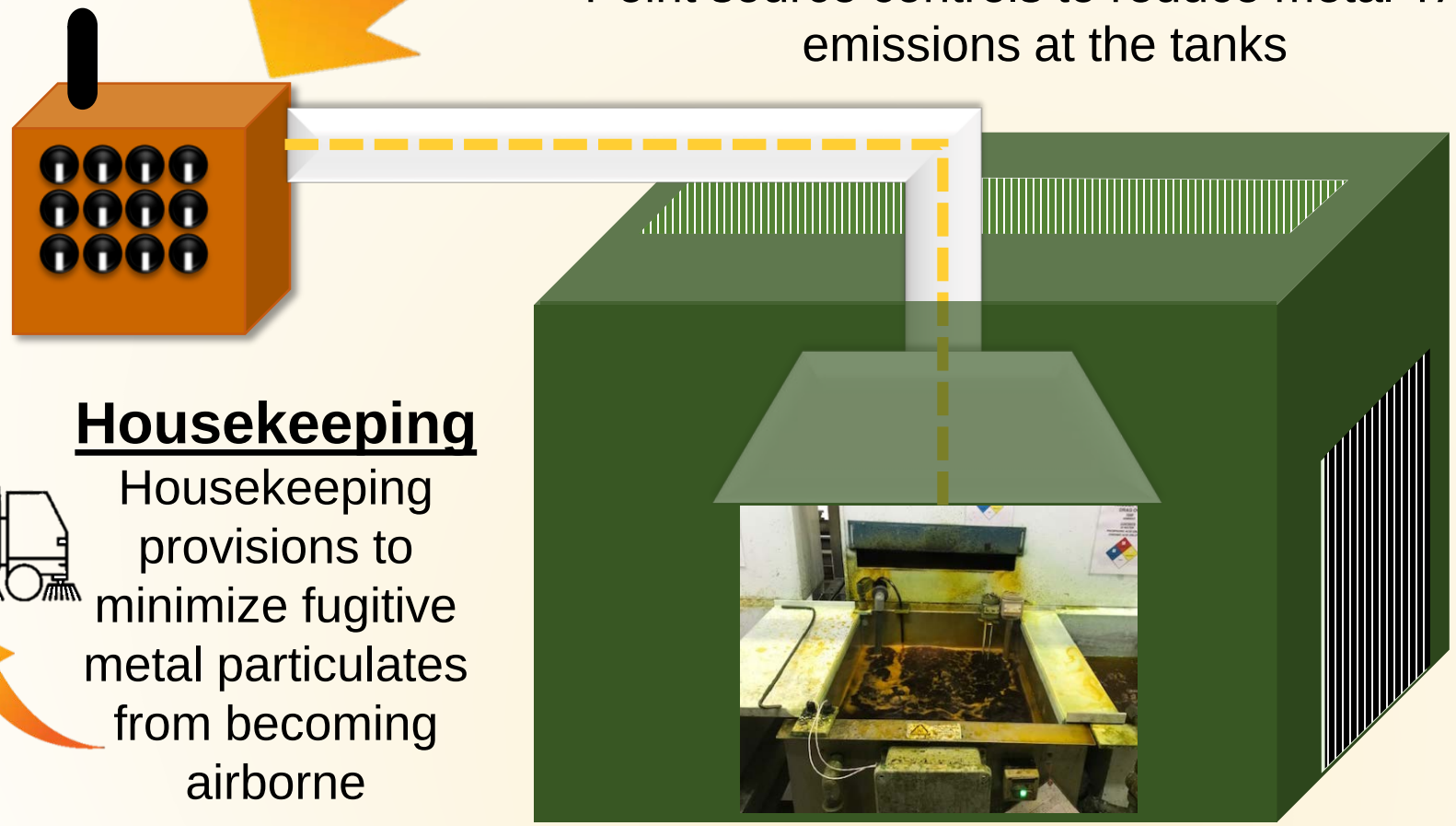
Metal TAC Emission Sources

- The most recent amendments to Rule 1469 and other rules addressing metal TAC emissions focus on two general emission sources:
  - Point sources
  - Fugitive sources
- Point source emissions originate from a fixed point, such as an air pollution control device
- Fugitive source emissions can occur due to inadequate or improper housekeeping measures or cross-drafts which allow emissions to escape
- The 2018 amendments to Rule 1469 included specific requirements to address both point and fugitive sources

Three Key Control Elements to Address Tank Emissions

Point Source Controls

Point source controls to reduce metal TAC emissions at the tanks



Enclosures

Enclosure, with minimal openings for ingress and egress to contain fugitive metal particulate emissions

Housekeeping

Housekeeping provisions to minimize fugitive metal particulates from becoming airborne

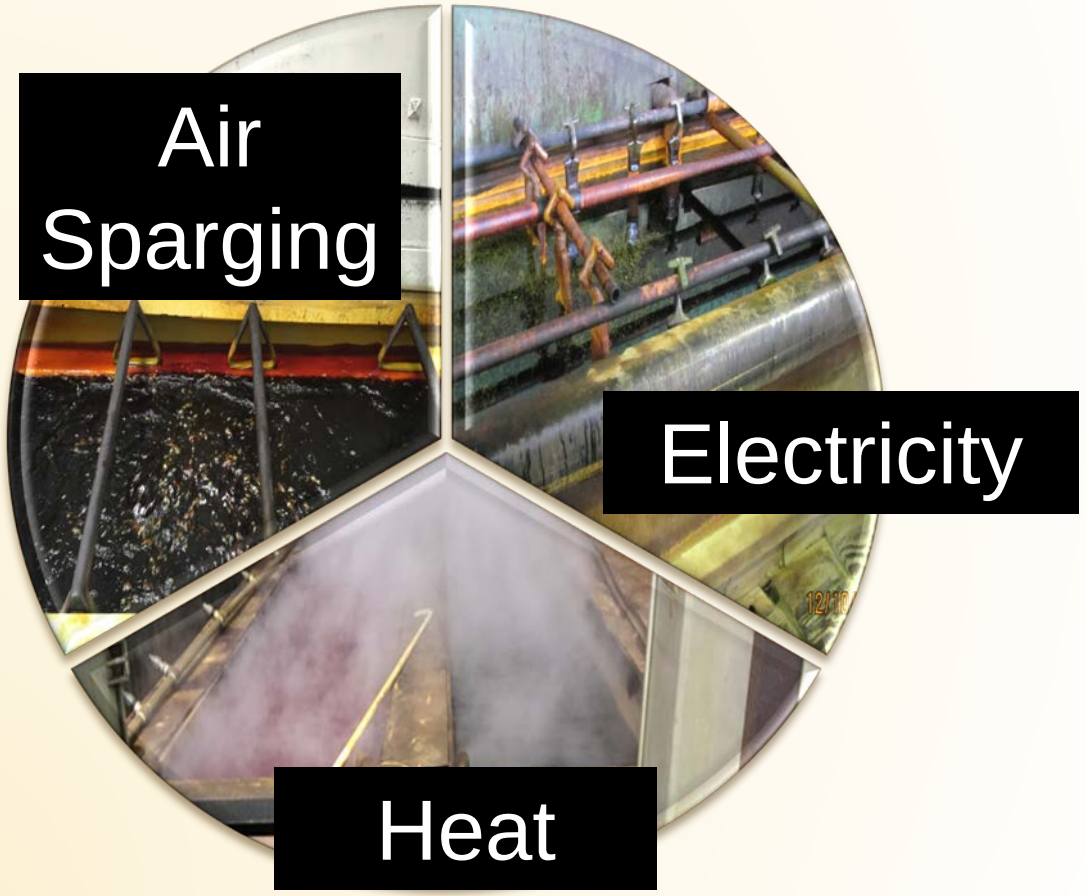
Issues Identified During the 2018 Amendments to Rule 1469

- Applying an electrical current (electrolytic) or air sparging are known to generate hexavalent chromium emissions from tanks containing chromic acid
- During the 2018 amendments to Rule 1469, heat was found to also cause hexavalent chromium emissions from the tank solution at high temperatures

Heated Sodium Dichromate Seal Tanks From Three Facilities (Not Air Sparged)		
Hexavalent Chromium Air Concentration (ng/m^3)	Hexavalent Chromium Tank Content (ppm)	Operating Temperature (F)
97,200	30,000-60,000 PPM	194-212
292,000	53,000 PPM	203
682,000	32,000 PPM	194-212
6,880	← Chromic acid anodizing tank	

Issues Identified During the 2018 Amendments to Rule 1469 *(continued)*

- Tanks that are potential sources of hexavalent chromium when air sparged, electrified, or heated included:
  - Rinse Tanks
  - Seal Tanks
  - Passivation Tanks
  - Chemical Conversion Tanks
  - Stripping Tanks
- Hexavalent chromium emissions from these uncontrolled tanks can impact surrounding communities



2018 Rule 1469 Amendments Reduced Point and Fugitive Source Emissions

- Point Source Emission Reductions
  - Control tanks that exceed a hexavalent chromium concentration and are either electrified, air sparged, or heated
  - Conduct periodic source testing and parametric monitoring
- Fugitive Emission Reductions
  - Conduct enhanced housekeeping
  - Use approved cleaning methods (e.g. HEPA vacuums)
  - Restrict compressed air cleaning near tanks
  - Reduce cross drafts through enclosure requirements

- These sources of hexavalent chromium emissions exist at facilities that are not subject to Rule 1469 and are only subject to Rule 1426
- Other metal TACs emissions subject to only Rule 1426 may be emitted through the same source

Approach of Proposed Amended Rule 1426

Need to Amend Rule 1426

- Tanks with metal TAC emissions have been identified and are not addressed in Rule 1426, such as
  - Tanks containing hexavalent chromium that are heated or air-sparged
  - Other tanks containing metal TACs that are heated, air-sparged, or electrified
- Recent metal TAC rules incorporated requirements to address metal TAC emissions from fugitive sources, which are not included in Rule 1426

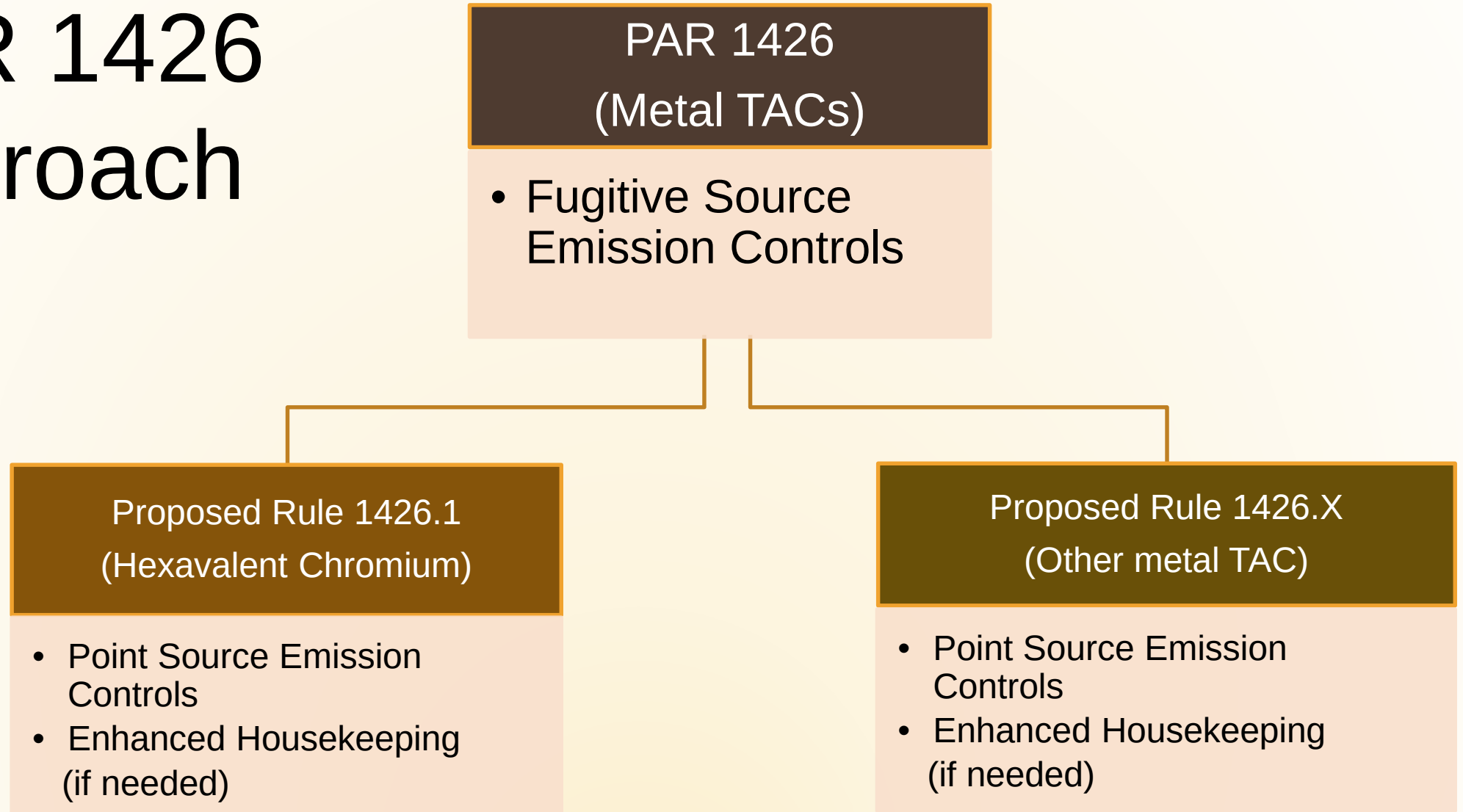
Comparison of General Rule Requirements

Basic Categories	Rule 1469	Rule 1426
Enclosure opening limitations to reduce cross-drafts	Yes	No
Basic housekeeping	Yes	Yes
Routine housekeeping using approved cleaning methods	Yes	No
Emission limits and control equipment	Yes	No
Source testing	Yes	No
Notifications	Yes	No

PAR 1426 Goals

- Update housekeeping, best management practices, and enclosure requirements to reduce fugitive emissions and be consistent with recent metal TAC rules
- Reduce emissions from tanks containing hexavalent chromium that are currently not regulated by Rule 1469
- Gather additional emission data from other metal TAC tanks to determine additional requirements
- Initiate future rule development with additional requirements for other metal TACs based on emission data

PAR 1426 Approach



Regulatory Approach for Metal Plating and Anodizing Operations

Rule 1469			
Point Source Controls	Building Enclosures	Housekeeping	Best Management Practices

PAR 1426			
None	Building Enclosure	Housekeeping	Best Management Practices

PR 1426.1 – Hexavalent Chromium Emissions from Non-Rule 1469 Tanks			
Point Source Controls	None*	None*	None*

PR 1426.X – Other Metal TAC Emissions			
Point Source Controls	None*	None*	None*

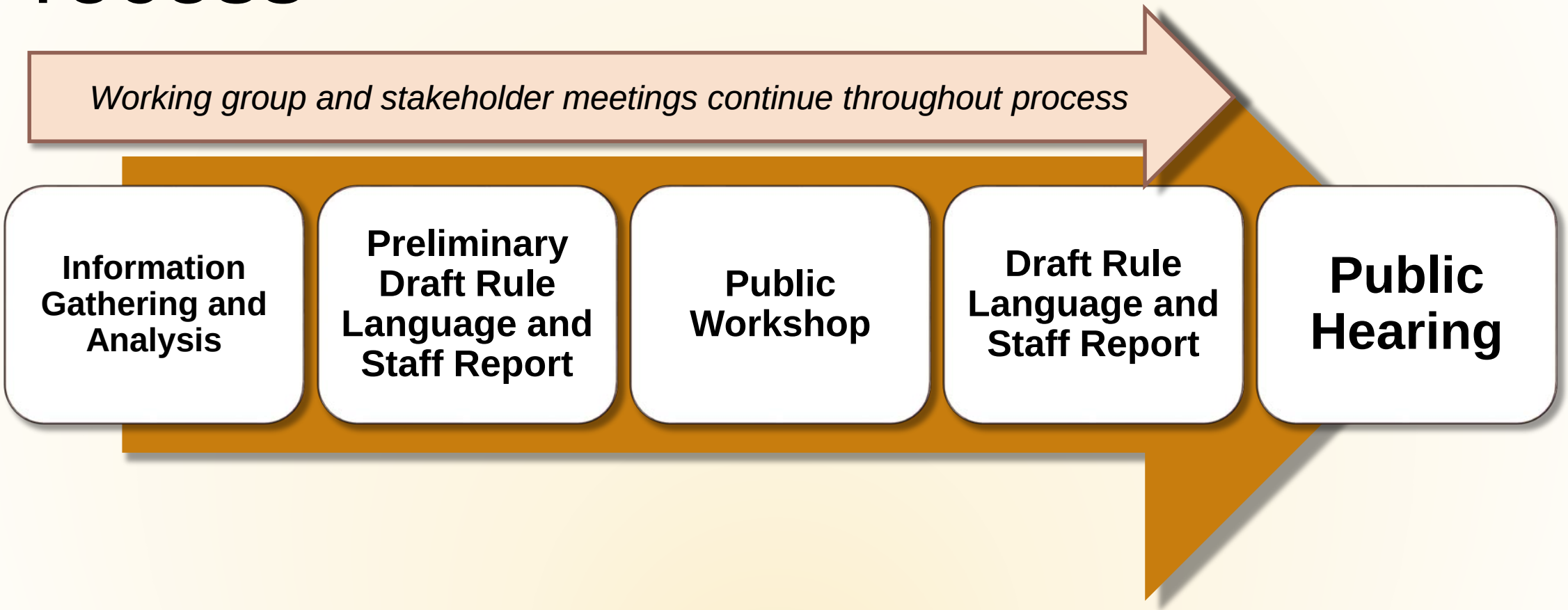
* References building enclosure, housekeeping, and best management requirements in PAR 1426 and may have additional enhancements to requirements

PAR 1426 Approach - Summary

- PAR 1426 would address a broad range of metal TAC fugitive source emissions through housekeeping, best management practices, and building enclosure requirements
- PR 1426.1 would focus on reduction of hexavalent chromium emissions from point sources, with enhanced fugitive source reduction requirements as needed
- PR 1426.X would focus on reduction of other metal TAC emissions from point sources, as information becomes available, with enhanced fugitive source reduction requirements as needed

Rule Development Process

Overview of Rule Development Process

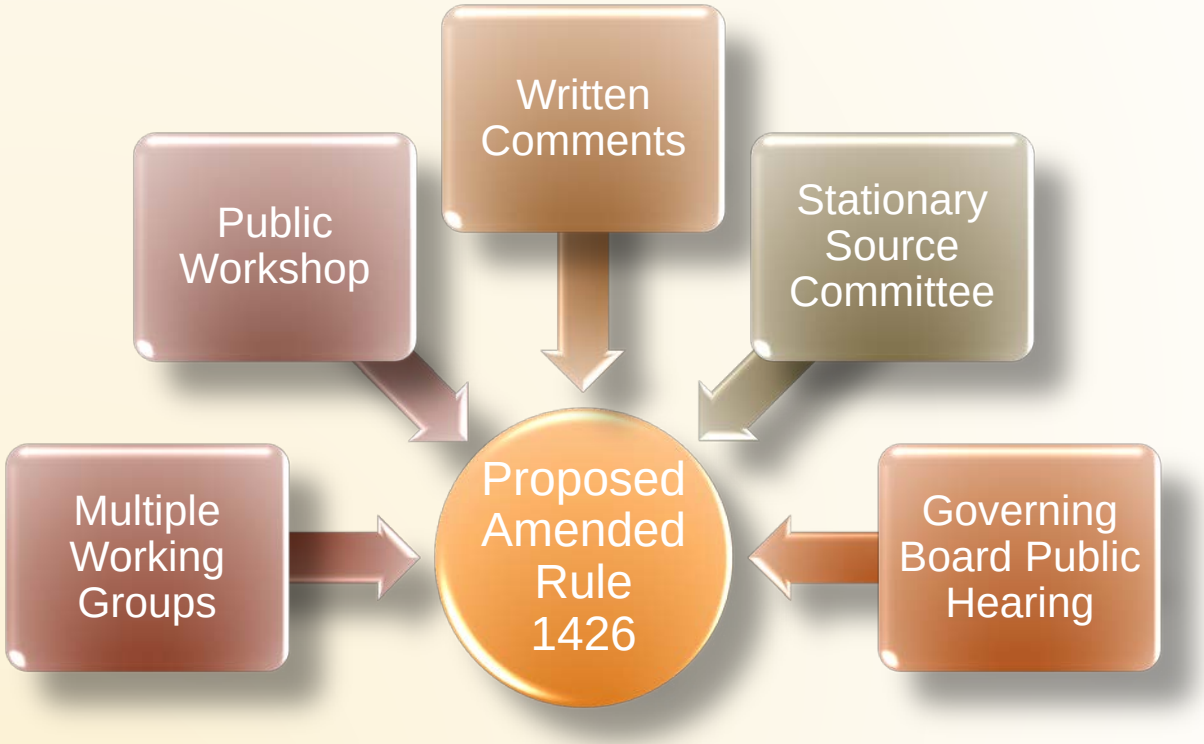


Rule 1426 Working Group

- Comprised of stakeholders including industry, environmental groups, community members, and public agencies
- Held throughout the rule development process and open to the public
- Objectives:
  - Build consensus and work through issues
  - Opportunity for early input by stakeholders
  - Develop a rule that affected facilities can implement
- Assist staff in understanding:
  - Key issues and concerns
  - Industry terms, industry practices, etc.
  - Applicable technologies

Stakeholder Input

- Stakeholders can provide input throughout the rulemaking process
- Early input is strongly encouraged to help develop proposed rule amendments and to address issues
- Working Group Meetings, Individual Meeting and Site Visits allow stakeholders to directly speak to staff to discuss individual issues



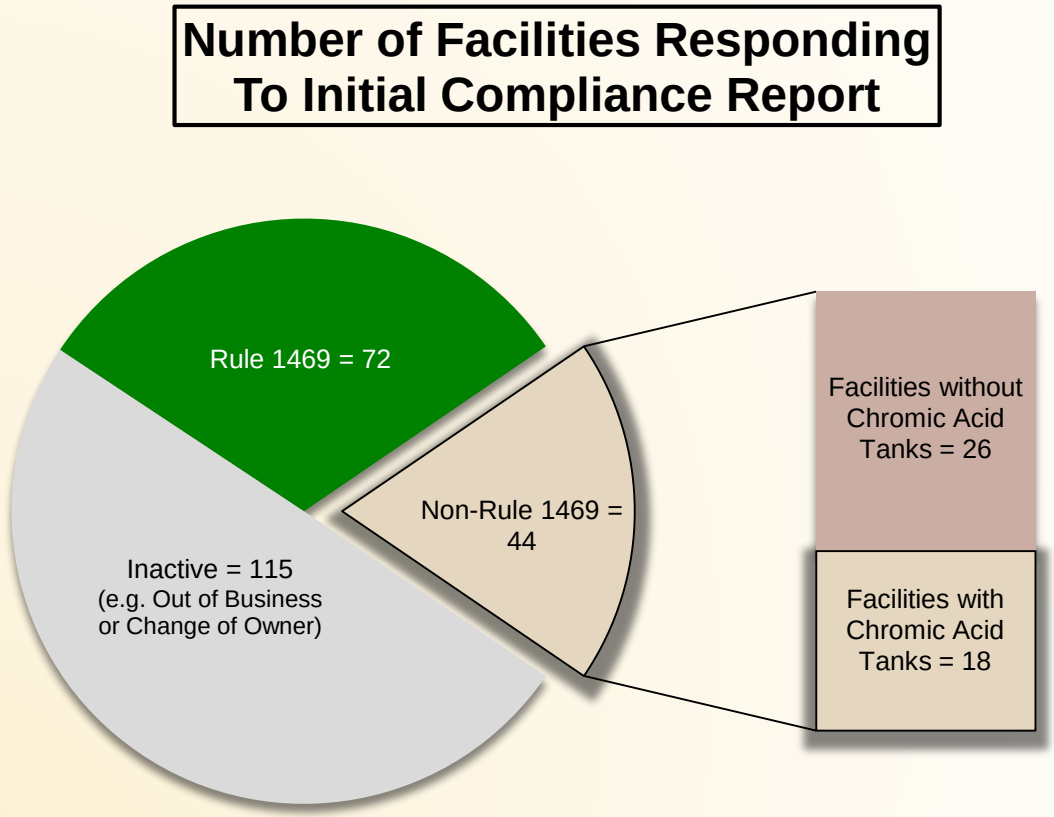
Next Steps: Information Gathering

Identification of Rule 1426 Facilities

- Approximately 360 facilities in the South Coast Air Basin may have processing tanks containing metal TACs
- Facility list was compiled by reviewing South Coast AQMD databases, supplemented with:
  - Internet searches
  - Industry association contacts
  - 2003 Initial Compliance Reports
- Updated information is needed to understand current universe of facilities and equipment
- Staff is in the process of updating facility information

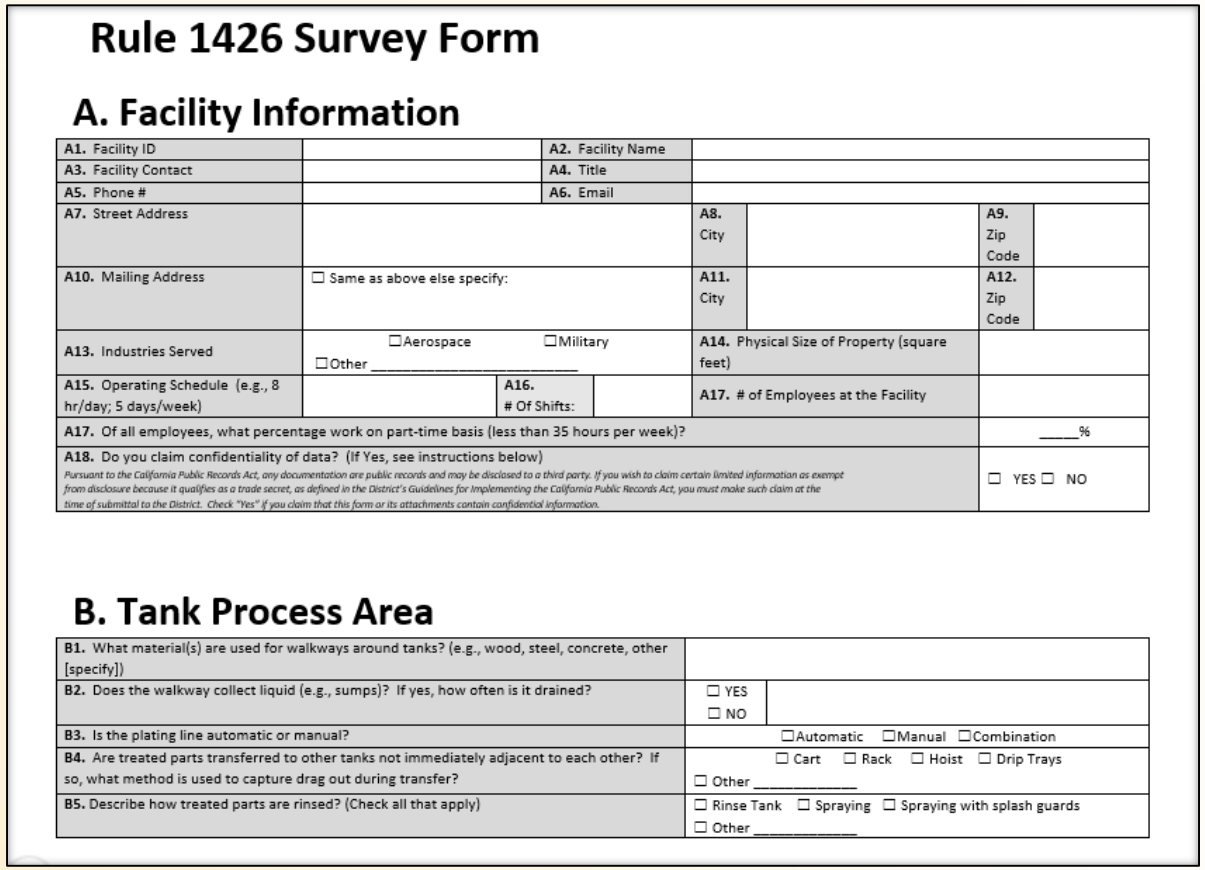
Results from 2003 Compliance Reports

- Rule 1426 required facilities to submit an Initial Compliance Report
  - 231 facilities submitted a report
  - 116 facilities are still active
- 44 tanks that contain chromic acid are currently unregulated because they are not at Rule 1469 facilities
- Other non-hexavalent chromium metal tanks may also have emissions driven by electrification, air sparging, or heating of the tanks
- Need to collect current information as compliance reports are from 2003



Survey

- Staff will be distributing a new survey to facilities after this working group meeting
- Objective is to collect current operational information about equipment type, tank sizes, materials processed, and housekeeping measures



Rule 1426 Survey Form

A. Facility Information

A1. Facility ID		**A2.** Facility Name					
A3. Facility Contact		**A4.** Title					
A5. Phone #		**A6.** Email					
A7. Street Address				**A8.** City		**A9.** Zip Code	
A10. Mailing Address	☐ Same as above else specify:			**A11.** City		**A12.** Zip Code	
A13. Industries Served	☐Aerospace ☐Military ☐Other _____			**A14.** Physical Size of Property (square feet)			
A15. Operating Schedule (e.g., 8 hr/day; 5 days/week)		**A16.** # Of Shifts:		**A17.** # of Employees at the Facility			
A17. Of all employees, what percentage work on part-time basis (less than 35 hours per week)?							____%
A18. Do you claim confidentiality of data? (If Yes, see instructions below) *Pursuant to the California Public Records Act, any documentation are public records and may be disclosed to a third party. If you wish to claim certain limited information as exempt from disclosure because it qualifies as a trade secret, as defined in the District's Guidelines for Implementing the California Public Records Act, you must make such claim at the time of submittal to the District. Check "Yes" if you claim that this form or its attachments contain confidential information.*							☐ YES ☐ NO

B. Tank Process Area

B1. What material(s) are used for walkways around tanks? (e.g., wood, steel, concrete, other [specify])	
B2. Does the walkway collect liquid (e.g., sumps)? If yes, how often is it drained?	☐ YES ☐ NO
B3. Is the plating line automatic or manual?	☐Automatic ☐Manual ☐Combination
B4. Are treated parts transferred to other tanks not immediately adjacent to each other? If so, what method is used to capture drag out during transfer?	☐ Cart ☐ Rack ☐ Hoist ☐ Drip Trays ☐ Other _____
B5. Describe how treated parts are rinsed? (Check all that apply)	☐ Rinse Tank ☐ Spraying ☐ Spraying with splash guards ☐ Other _____

Next Steps

- Proceed with rulemaking for Proposed Amended Rule 1426 to reduce fugitive emissions of metal TACs by updating housekeeping requirements, best management practices, and building enclosure requirements
- Information gathering from metal finishing facilities
  - Send out facility survey to affected facilities

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