

Proposed Rule 1430 Control of Emissions from Grinding Operations at Forging Facilities

Working Group Meeting #4

December 1, 2016

Working Group Meeting

- Focus of Working Group Meeting is to discuss Proposed Rule 1430
- Staff will present the proposed rule language
 - Seeking initial thoughts
 - Provide comments to staff by Friday December 9, 2016
 - Staff can meet with individual stakeholders
- Some background information about air monitoring efforts in the City of Paramount – only as it relates to this rulemaking

Review of Rule Development Activities to Date

1st Working Group Meeting

- Public raised air quality concerns
- Air quality glass plate samples at Carlton Forge Works (CFW)
- Beginning of Ambient Air Monitoring
- Summary of initial facility site visits

2nd Working Group Meeting

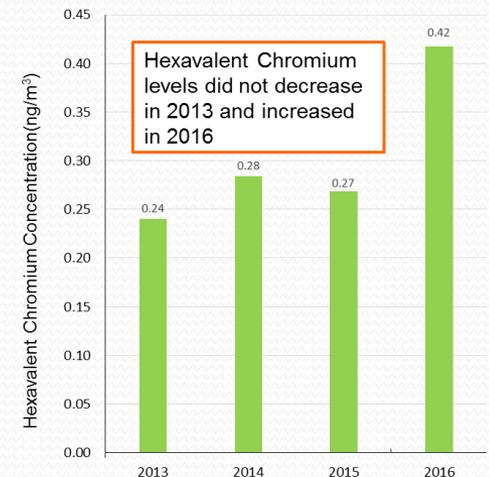
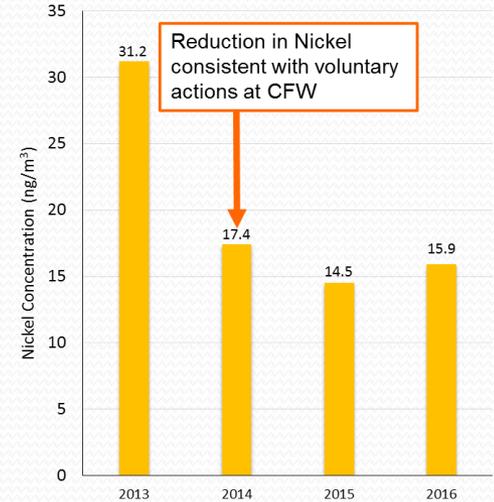
- Additional site visits
- Information gathering, evaluation of emissions sources, existing emissions controls, and available emissions control strategies
- Evaluation of ambient air data from Paramount monitoring efforts
- Initial rule concepts

3rd Working Group Meeting

- Presented initial rule concepts

Nickel and Hexavalent Chromium Air Monitoring Results

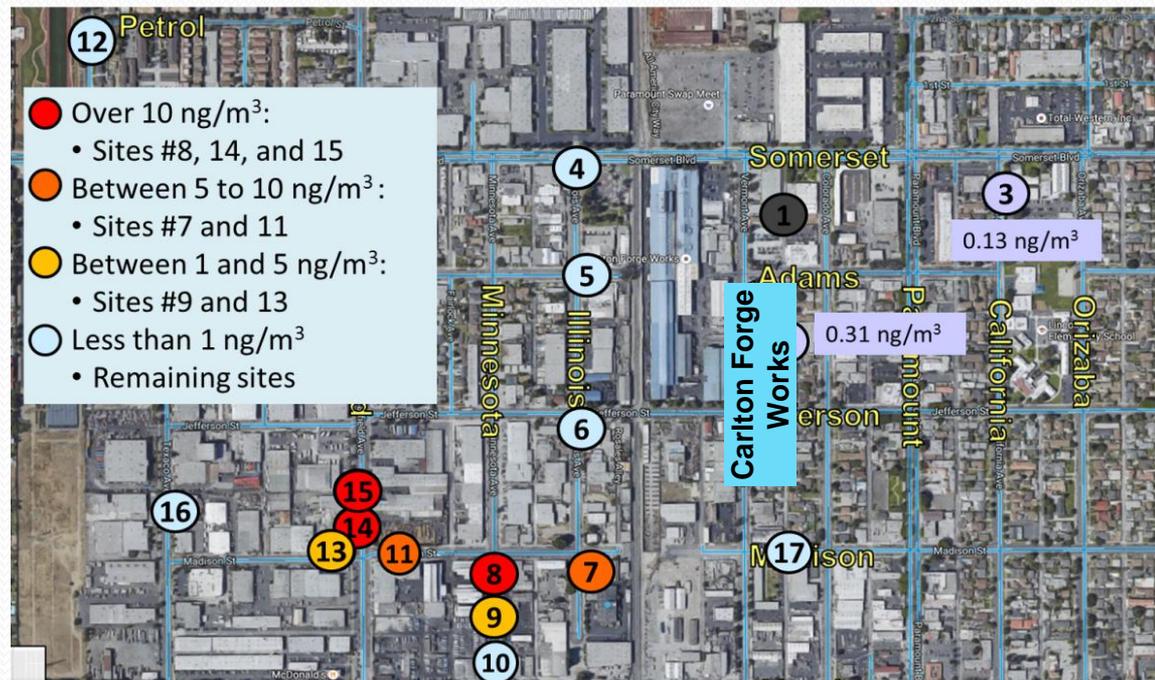
- 2014 nickel reductions consistent with Carlton Forge Works 2013 actions to reduce and contain emissions from grinding activities
- Hexavalent chromium levels did not track with nickel levels
- Additional air monitoring needed to identify the hexavalent chromium source(s)
- On October 15, 2016, SCAQMD began expanded monitoring to identify source(s) of hexavalent chromium
- Levels near Carlton Forge Works were elevated, but much higher levels identified several blocks south-west



* 2013 and 2016 data are partial years

Expanded Monitoring of Hexavalent Chromium

- Monitored levels near Carlton Forge Works at Sites #4, 5, and 6 were less than 1 ng/m³, but higher than typical background levels
- Significantly higher levels were found south-west of Carlton Forge Works
- SCAQMD will return to further investigate source(s) of hexavalent chromium near Carlton Forge Works



Expanded Monitoring of Hexavalent Chromium *(continued)*

- To avoid further delays, rulemaking will focus on requirements for grinding operations
- Additional monitoring planned near other forging facilities in Paramount
- If operations related to forging are a source of hexavalent chromium, additional rulemaking may be needed

Proposed Rule 1430

Rule Structure

- Purpose
- Applicability
- Definitions
- Total Enclosures
- Housekeeping Requirements
- Maintenance and Repair Activity Requirements
- Source Tests
- Monitoring
- Recordkeeping
- Signage
- Permit Application Submittals

Purpose (a)

- Purpose is to reduce toxic and particulate matter (PM) emissions from dry metal grinding and cutting operations at metal forging facilities
 - Proposed rule establishes PM emission limits to capture metal particulate
 - Concurrent reductions in PM will reduce toxic metal particulate
- Objectives
 - Reduce exposure to metal particulate and public nuisance impacts from grinding and cutting operations from metal forging operations to surrounding communities

Applicability (b)

- Applies to all persons who own or operate a metal forging facility where dry metal grinding and metal cutting operations are conducted
- Does not include metal grinding or cutting conducted under continuous flood of metal removal fluid
 - Grinding under continuous flood of metal removal fluid minimizes fugitive particulate emissions
 - Metal cutting operations conducted with coolants minimizes fugitive particulate emissions
- Identified 22 metal forging facilities that conduct metal grinding operations onsite (2 facilities have dry metal cutting operations)
- May expand applicability to other sources within forging operations at a later date based on air monitoring results

Definitions (c)

- Proposed Rule includes a series of definitions
- Seeking input to ensure definitions are consistent with industry terminology
- Most definitions are based on other SCAQMD rules or trade industry terminology
- Key definitions are discussed throughout the presentation

General Approach



Total Enclosures

- Captures fugitive emissions that are not captured by the point source controls



Emission Controls at Grinding Operation

- Pollution control device that contains or filters metal particulate at grinding operations



Housekeeping Measures

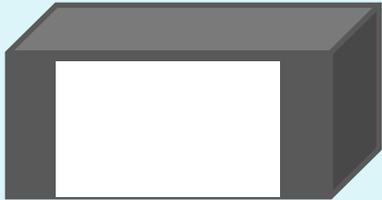
- Clean up metal particulate that lands on surfaces in and around facility before it becomes airborne

Total Enclosures (d) (Overview)

- Grinding and cutting in the open air is prohibited from date of adoption
- Objective is to require all facilities to conduct grinding and cutting in a total enclosure
- Two compliance paths depending on if facility conducts grinding or cutting in an existing enclosure
 - Existing enclosure is permanent containment building with a floor, walls, and roof with openings that is existing as of date of adoption
- Additional provisions for facilities within 300 feet of a sensitive receptor

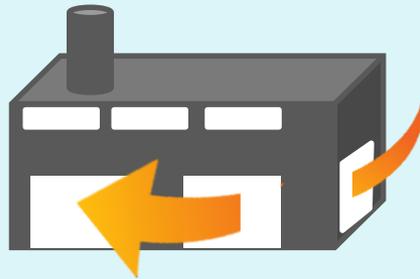
Types of Enclosures

Temporary Enclosure



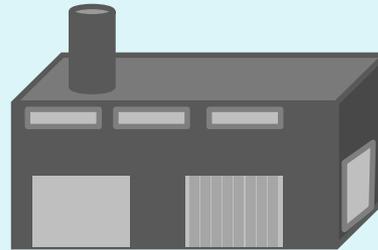
- Walls or partitions on at least three sides or $\frac{3}{4}$ of perimeter
- Floor and roof or cover

Enclosure



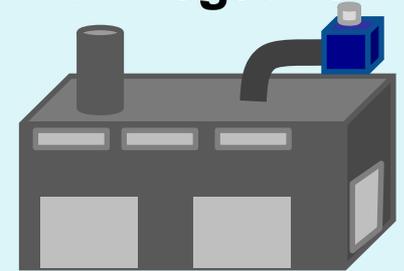
- Permanent building/structure
- Floor, walls, roof, with ingress and egress openings
- Fugitive emissions may escape openings

Total Enclosure



- **Enclosure plus:**
- Minimize openings using automatic roll-up doors, plastic strip curtains, etc. to:
 - Minimize cross-draft
 - Contain fugitive emissions

Total Enclosure with Negative Air



- **Total Enclosure plus:**
- Negative airflow
- Air within enclosure vented to air pollution control device

Requirements for Facilities with an Existing Enclosure

- Facilities that conduct metal grinding or cutting in an existing enclosure must continue grinding in the enclosure
- No later than 6 months from date of adoption, an owner or operator must:
 - Conduct metal grinding or cutting operations in a total enclosure
 - Minimize release of fugitive metal dust emissions from passages, doorways, and bay doors by either:
 - installing automatic roll-up doors, plastic strip curtains, or vestibules for doors and openings in the total enclosure; or
 - an alternative methods to minimize release of fugitive metal dust from the total enclosure that is equivalent or more effective

Requirements for Facilities Without an Existing Enclosure

- No later than 12 months from date of adoption, an owner or operator that is not conducting metal grinding or cutting operations in an existing enclosure must conduct operations in a total enclosure
- Until total enclosure requirements are met, an owner or operator must conduct:
 - Grinding or cutting in a temporary enclosure or enclosure; and
 - Enhanced housekeeping measures *after each shift* using a wet cleaning or vacuum to clean ground surfaces within:
 - 30 feet of metal grinding work station(s);
 - 40 feet of any entrance/exit point for the temporary enclosure; and
 - Temporary enclosure areas where metal grinding operations occur

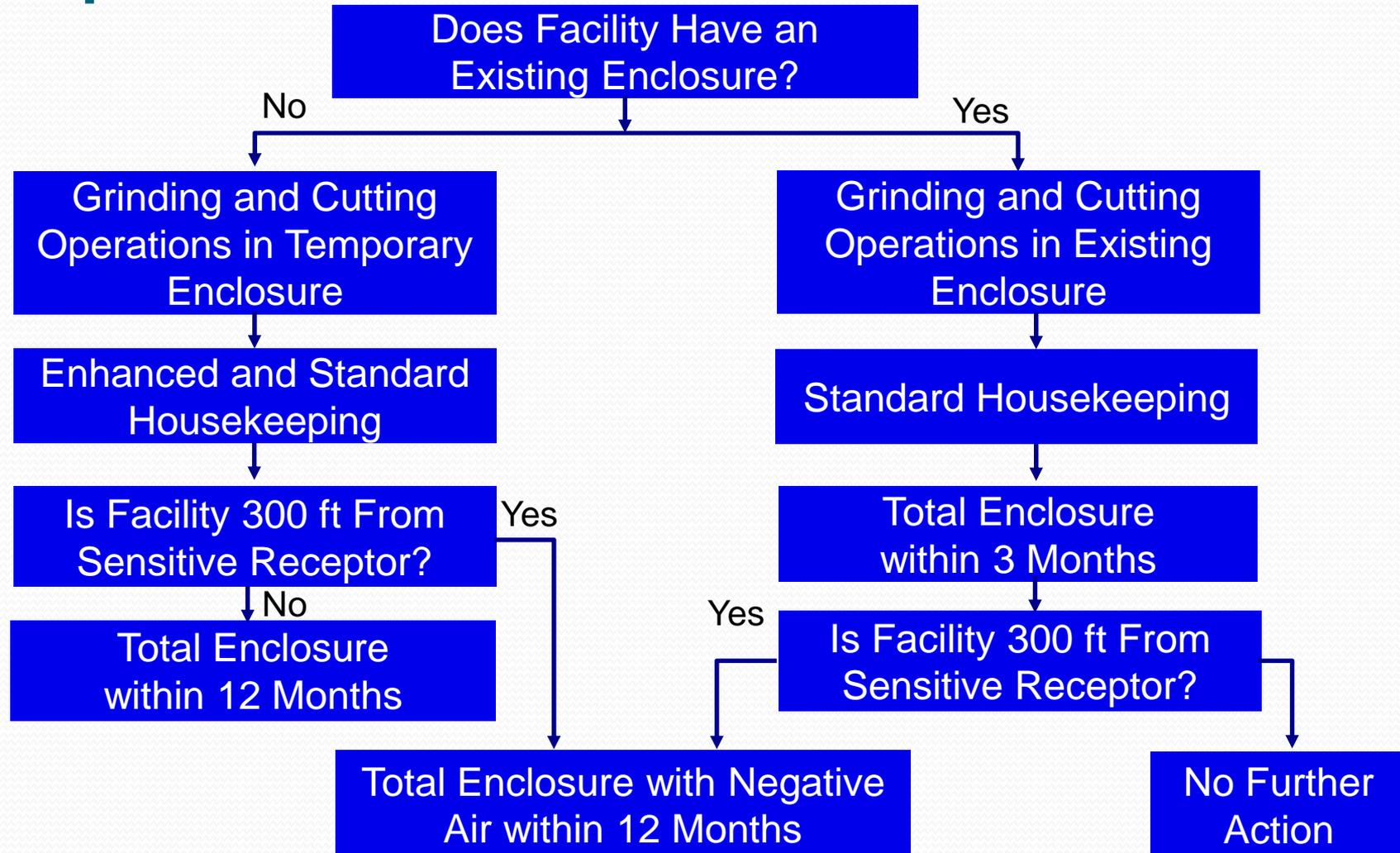
Requirements for Facilities 300 Feet of a Sensitive Receptor

- Facilities with metal grinding operations located within 300 feet of a sensitive receptor shall:
 - Vent the enclosure to an emission control device that meets 0.01 grains/dry standard cubic feet (gr/dscf); and
 - Meet an in-draft velocity of the total enclosure that is maintained at 200 feet per minute in any opening
 - In-draft velocities shall be determined by placing an anemometer or equivalent device at the center of the plane of any opening of the total enclosure
- 300 feet is based on CARB's Guidelines for chrome platers
- Distance is measured from the edge of the total enclosure to the property line of the nearest sensitive receptor

Additional Enclosure Requirements

- Enclosure must be designed in a manner that does not conflict with OSHA requirements for worker safety
- An owner or operator must monthly inspect the enclosure for breaks, cracks, gaps, or deterioration that could cause or result in fugitive metal dust
- Owner or operator shall repair any breaks, cracks, gaps, or deterioration within 72-hours of discovery
- Executive Officer may approve a request for extension, provided the request is submitted before the end of the 72-hours and owner or operator can provide information to substantiate:
 - the repair will take longer than 72-hours; or
 - the equipment, parts or materials needed for the repair cannot be obtained within 72-hours

Summary of Enclosure Requirements



Emission Control Device – Emission Limit

- Point source requirements effective no later than 12 months from date of adoption
- Vent emissions from metal grinding and metal cutting operations to emission control device that:
 - Does not exceed a PM outlet concentration of 0.01 gr/dscf (Same as Rule 1155); and
 - Final stage of any emission control device is fitted with HEPA filters, or filter media rated by the manufacturer to achieve a minimum of 99.97% control efficiency for 0.3 micron particles
- Remove weather caps installed on stacks

Emission Control Device - Alternative Provision for Emission Limits

- Alternative provision to allow use of final stage of filter media rated by the manufacturer to achieve a minimum of 98% control efficiency if the owner or operator:
 - Does not conduct billet grinding, swing grinding, torch cutting, or metal cutting;
 - Operates a combination of 10 or fewer hand grinding units or stand grinding stations; and
 - Toxic emissions do not exceed the screening levels identified in Table I – Toxic Air Contaminants in Rule 1401 - New Source Review of Toxic Air Contaminants

Emission Control Device – Ventilation Requirements

- Operate the emission control device at the minimum hood induced capture velocity as specified in the most current edition of the Industrial Ventilation Manual
- Provide permanent visual indicators for grinding stations that identify the maximum distance metal grinding and cutting operations may occur to ensure emission collection requirements are met
- Metal grinding and cutting operations must be in front of hood within the visual indicators
- Air flow must not be obstructed between the metal grinding or cutting operation and the emission collection system



Housekeeping Requirements (f)

- Housekeeping provisions effective beginning 30 days from rule adoption
- Semi-annual roof cleanings, no more than 6 calendar months apart
- Monthly cleanings by wet cleaning or HEPA vacuum of ground surfaces of an existing enclosure or total enclosure where metal grinding or cutting operations occur
- Store all materials capable of generating fugitive metal dust in sealed containers, unless within a total enclosure
- Compressed air cleaning operations shall not be conducted within 30 feet of any metal grinding or cutting operation

Housekeeping Requirements (Continued)

- Daily cleanings by wet cleaning or HEPA vacuum of:
 - Areas where metal containing wastes generated from grinding operations are stored, disposed of, recovered, or recycled;
 - Ground surfaces within 20 feet of metal grinding workstation(s)
 - Ground surfaces within 20 feet of any entrance/exit point for an existing enclosure or total enclosure; and
 - Ground surfaces within 10 feet of an emission control device dedicated to metal grinding operations

Maintenance and Repair Activity Requirements (g)

- Beginning 30 days from rule adoption, specific requirements for maintenance and repair activities
- Maintenance and Repair Activity means any of the following activities conducted outside of a total enclosure that generates or has the potential to generate fugitive metal-dust:
 - maintenance or repair activities on any emission control device that vents metal grinding or metal cutting operations; or
 - replacement or removal of any duct section used to vent metal grinding or metal cutting operations

Maintenance and Repair Activity Requirements (continued)

- No later than one hour after completion of any maintenance or repair activity, wet clean or HEPA vacuum ground surfaces within 20 feet of area where maintenance or repair activity was conducted
- Immediately stop any maintenance and repair activity if instantaneous wind speeds are ≥ 20 mph - work may be continued if it is necessary to prevent the release of metal particulate emissions
- Wet clean or a HEPA vacuum all metal-contaminated equipment and materials used for any maintenance and repair activity immediately after completion of work in a manner that does not generate fugitive metal dust

Source Test Requirements (h)

- Source tests required for any emission control device venting metal grinding or metal cutting operations as follows:
 - PM emissions - once every 12 months
 - Hexavalent chromium and multiple metal emissions - once every 48 months
 - Considering requirement annual bulk sample of baghouse catch
- Existing, permitted emission control devices – submit pre-test protocol for initial source test no later than 60 days after rule adoption
- New emission control devices – submit pre-test protocol for initial source test no later than 30 days after initial start-up
- Conduct source test within 60 days of pre-test protocol approval
- Subsequent pre-test protocols - submit 90 days prior to deadline for next source test

Monitoring (i)

- Monitor Baghouse Leak Detection Systems pursuant to District Rule 1155
- Measure static pressure once per operating shift in accordance with the *Industrial Ventilation, A Manual of Recommended Practice for Operation and Maintenance*
- Continuously monitor pressure of HEPA filters
- Conduct a periodic smoke test once every 3 months for each emission collection system

Recordkeeping

- Monthly records for the weight of:
 - Metal processed; and
 - Metal waste collected by the baghouse catch and housekeeping activities
- Dates when bags for baghouses or HEPA filters are replaced
- Records of periodic smoke tests, maintenance, and repair activities
- Log of calls regarding odors or other air quality related issues
- Records for Baghouse Leak Detection Systems pursuant to District Rule 1155
- Maintain records for five years, with at least the two most recent years kept onsite and made available to the Executive Officer upon request

Signage

- Install a sign that says, “TO REPORT ODORS FROM THIS FACILITY, CALL EITHER [*FACILITY CONTACT PHONE NUMBER*] OR THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG” and meets the following requirements:
 - Installed within 50 feet of each entrance of the facility that is visible to the public and in a location on each side of the facility that is visible to the public
 - Measures at least 16 square feet; and
 - Displays lettering at least 3 inches tall with text contrasting with the sign background

Permit Submittals

- For metal grinding or metal cutting operations existing prior to date of rule adoption, submit permit applications for all construction and/or necessary equipment no later than 60 days after date of rule adoption for:
 - Emission Control Devices
 - Total Enclosures with Negative Air

Schedule

- Public Workshop – January 2017
- Board Hearing – March 2017

Staff Contact:

Dan Garcia
(909) 396-3304
dgarcia@aqmd.gov

Eugene Kang
(909) 396-3524
ekang@aqmd.gov