Working Group Meeting #2
Proposed Amended Rule 1420
Emissions Standard for Lead

May 31, 2017

SCAQMD Headquarters

Diamond Bar, CA

Summary of Working Group #1

- Regulatory Background of the National Ambient Air Quality Standard for lead
- Health effects of lead
- Discussion of potentially affected sources
- Discussion of initial concepts for PAR 1420
  - Initial recommendation to lower the ambient lead concentration in Rule 1420 from 1.5 µg/m^3 to 0.10 µg/m^3 averaged over any 30 days
    - Justification of 0.10 µg/m^3
    - Concept of a phased implementation schedule, similar to the approach used for Rule 1420.2
  - Initial concepts for point source, source testing, enclosures, housekeeping, and on-ramp for monitoring requirements
- Discussed possible companion Rule 1407 to address multiple metals

Summary of Key Points Working Group Meeting #1

- A consultant suggested that the SCAQMD consider a Compliance Plan as an alternative compliance approach
  - Compliance plan could include monitoring to allow operators to demonstrate compliance with PAR 1420 emission limits
- SCAQMD staff response
  - Staff was not planning on including a Compliance Plan in the proposed amended rule
  - Staff is looking into this approach

Goals of PAR 1420

- To reduce fugitive lead emissions and to minimize health effects associated with lead exposure
- To implement the lead State Implementation Plan
- To revise emissions standard for lead to match the 2008 U.S. EPA lead National Ambient Air Quality Standard (NAAQS)
- To align the lead ambient concentration limit of PAR 1420 consistent with Rules 1420.1 and 1420.2

Proposed Amendments to Rule 1420

- Presentation will focus on proposed amendments to:
  - Purpose and Applicability
  - Ambient Lead Concentration Limit
  - Lead Point Source Controls
  - Source Testing
  - Total Enclosures
- Format of the presentation is a summary of the current Rule 1420 provision and then Proposed Amended Rule (PAR) 1420
- Next Working Group Meeting will focus on ambient lead monitoring, housekeeping, concepts for alternative provisions, and recordkeeping

Purpose

- Current Rule 1420 purpose is to reduce lead emissions from non-vehicular sources
- PAR 1420 proposes to maintain existing purpose – no changes

Applicability – Current Rule 1420

- Rule 1420 applies to all persons who own or operate facilities that use or process lead-containing materials including, but not limited to primary or secondary lead smelters, foundries, lead-acid battery manufacturers or recyclers, and lead-oxide, brass and bronze producers
- Applicability based on the greatest amount of lead processed in any one of the three years dating back from the adoption of this rule, and the amounts processed annually thereafter

Summary of Current Rule 1420 Applicability and Exemptions

Current Rule 1420	Requirements					
	Scenario	Ambient Lead Standard	Lead Point Source Controls	House-keeping	Ambient Monitoring	Record-keeping
Applicability	Process > 2 tons of lead/year	Yes	Yes	Yes	Yes	Yes
	Lead emissions (point and fugitive) ≥ 0.5 pound per day	Yes	Yes	Yes	Yes	Yes
Exemptions	Process ≤ 2 tons of lead/year	Yes	No	No	No	Yes*
	Process > 2 tons of lead/year AND lead emissions (point and fugitive) <0.5 pound per day**	Yes	No	Yes	No	Yes

* Only housekeeping records required to be maintained

** Must submit a compliance plan to demonstrate facility is lead processing and emission limit

Applicability – PAR 1420

- Maintain applicability requirement to include facilities that use or process lead-containing materials
- All parts of PAR 1420 would apply to any facility processing > 2 tons per year (4,000 pounds per year) of lead based on any five calendar years prior to [date of adoption], or any year thereafter where the lead is >0.05% by weight
  - Same lead processing threshold as current Rule 1420
  - Approach for basis for determining process amount, i.e. any five calendar years, is consistent with Rule 1420.2 – seeking input
  - Applicability will be based primarily on lead processed and not on lead emissions
  - Included lead content of starting material of >0.05%, to provide clarity regarding types of sources that are applicable – seeking input

Applicability – PAR 1420 (Continued)

- Ambient concentration, recordkeeping, and housekeeping would apply to facilities that process < 2 tons of lead per year
- Remove the 0.5 pound per day emission threshold for exemption
- Considering which Rule provisions, if any, will be applicable for facilities that process materials that contain <0.05% lead by weight

Applicability – PAR 1420

- Remove provision that exempts facilities from certain provisions if lead emissions are < 0.5 pound per day from all point and fugitive emissions
  - Fugitive emissions cannot be accurately quantified without ambient monitoring
  - Processing amounts are easier to verify
- Facilities that process ≤ 2 tons of lead/year will be subject to housekeeping provisions in addition to ambient concentration limit and recordkeeping

Comparison Between Current Rule 1420 and PAR 1420 Applicability

Applicability	Rule 1420	PAR 1420
Process > 2 tons of lead/year	Yes	Yes
Basis for determining amount of lead processed	Greatest amount of lead processed in any 1 of 3 years	If over threshold in past 5 years or any year thereafter
Lead emissions (point and fugitive) ≥ 0.5 pound/day	Yes	Yes
Process ≤ 2 tons of lead/year	Applicable Provisions • Ambient Lead Concentration Limit • Recordkeeping	Same as Rule 1420, add Housekeeping
Process > 2 tons of lead/year AND lead emissions (point and fugitive) <0.5 pound per day*	Applicable Provisions • Ambient Lead Concentration Limit • Recordkeeping • Housekeeping	Removed exemption

* Must submit a compliance plan to demonstrate facility is meeting lead processing and emission limit

Ambient Lead Concentration Limit – Current Rule 1420

- Lead processing facilities shall not discharge to the atmosphere
  - Emissions which cause ambient concentrations greater than 1.5 $\mu g/m^3$ averaged over 30 days beyond the property line of a facility
  - Fugitive dust emissions that exceed a Ringelmann 0.5, or 10 percent opacity for more than 3 minutes aggregate in any 60-minute period
- Lead ambient concentration limit must be at least as stringent as the lead National Ambient Air Quality Standard

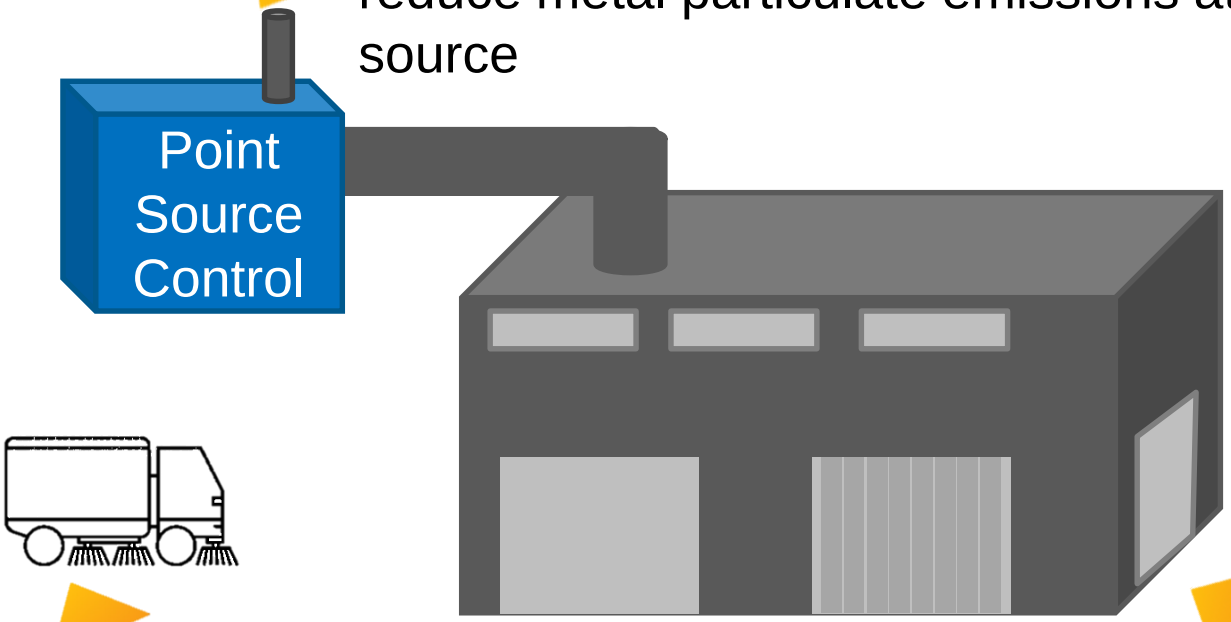
Ambient Lead Concentration Limit – PAR 1420

- Maintain Ringelmann 0.5, or 10 percent opacity requirement
- Lead processing facilities shall not discharge emissions into the atmosphere which contribute to ambient concentrations of lead that exceed:
  - 0.150 µg/m^3 averaged over any 30 consecutive days beginning date of adoption
  - 0.100 µg/m^3 averaged over any 30 consecutive days beginning January 1, 2021
- Lowered ambient concentration limit consistent with Rules 1420.1 and 1420.2
  - Rule 1420.2 allowed a three-year period for implementation of the 0.100 µg/m^3 ambient concentration limit

Comparison Between Current Rule 1420 and PAR 1420 Ambient Lead Concentration Limit

Applicability	Rule 1420	PAR 1420
Ringelmann 0.5, or 10 percent opacity requirement	Yes	Yes
Ambient lead concentration limit	1.5 µg/m^3 averaged over 30 days	• 0.150 µg/m^3 averaged over any 30 consecutive days (date of adoption) • 0.100 µg/m^3 averaged over any 30 consecutive days (January 2021)

Proposed Rule 1420 Control Approach



Point Source Controls

Point source pollution controls to reduce metal particulate emissions at source

Total Enclosure

Building 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

Lead Point Source Requirements – Current Rule 1420

- Point source requirements apply to lead-processing facility and requires all emission points to be vented to an emission collection system
  - Must reduce lead emissions by 98% control efficiency; or
  - Must reduce particulate emissions by 99% control efficiency
  - No provision for lead mass emission rate
  - No provisions for capture efficiency
- Control efficiency versus emission rate requirement
  - Demonstration of a control efficiency requirement requires testing the inlet and outlet; while lead mass emission limit requires testing outlet only
  - Lead mass emission limit is easier to verify than control efficiency for sources with a low inlet
  - Lead mass emission limit provides a more absolute amount of lead that will be allowed from a point source

Lead Point Source Requirements – PAR 1420

- Maintain applicability of lead point source requirements as current Rule 1420
  - Lead point source requirements apply to lead-processing facilities and require all point sources to be vented to an emission control system
- Recommending two options for point source requirement – Owner or operator will be required to either meet:
  - Lead control efficiency of 99% or;
  - Outlet mass emission rate limit of 0.0003 pound per hour
- Remove 99% particulate matter (PM) emission requirement, consistent with Rule 1420.2
- Lead mass emission rate of 0.0003 pound per hour
  - Is consistent with stack outlet test results reported for Rule 1420.2; and
  - Requires measuring the outlet, and reduces source testing cost

Lead Point Source Requirements – PAR 1420

- Point source emission standard ensures that the pollution control devices will meet a specified emission standard
- Collection efficiency ensures the pollution control device has the appropriate air flow to collect the emissions
  - Low Collection Efficiency can lead to increased fugitive emissions
- Proposing requirement that emission collection systems for lead point sources meet the minimum capture velocity requirement specified by the applicable standards of the U.S. Industrial Ventilation Manual
  - Based on the most current edition of the U.S. Industrial Ventilation Manual applicable at the time the permit application is deemed complete with the SCAQMD

Other Lead Point Source Requirements Under Consideration – PAR 1420

- Considering other provisions for lead point sources, seeking input
- Possible other lead point source requirements
  - Filter media other than a filter bag(s) for any lead emission control device such as HEPA and cartridge-type filters rated by the manufacturer to achieve a minimum of 99.97% control efficiency by 0.3 micron particles
  - Use polytetrafluoroethylene (PTFE) membrane-type filter bags, or any other material that is equally or more effective for the control of lead emissions, and approved for use by the Executive Officer

Comparison Between Current Rule 1420 and PAR 1420 Lead Point Source Requirement

Lead Point Source Requirement	Rule 1420	PAR 1420
Control Efficiency for PM10	99% control efficiency	No requirement
Control Efficiency for Lead	98% control efficiency	99% control efficiency (Must meet either lead control efficiency or lead mass emission limit)
Lead Mass Emission Rate	No requirement	0.0003 lbs/hour per point source (Must meet either lead control efficiency or lead mass emission limit)
Capture Efficiency	No requirement	Applicable Industrial Ventilation

Source Testing Requirements for Lead Point Source Controls – Current Rule 1420

- Many facilities either conducted one source test or exempt from source test by demonstrating (through Compliance Plan) emissions of less than 0.5 pound/day
  - facilities processing more than 2 tons of lead per year and with maximum daily lead emissions of less than 0.5 pounds per day currently exempted
- Under Rule 1420, the majority of facilities were exempt from source testing requirements because they submitted a Compliance Plan showing their lead emission rate was < 0.5 pound per day
- Source testing needed to confirm facilities are meeting lead point source requirements

Source Testing Requirements for Lead Point Source Controls – PAR 1420

- Initial and periodic source test needed to confirm meeting lead point source control requirements for control efficiency of lead emission rate and capture efficiency
- Recommend biennial source testing of point source stacks
- Triennial testing if lead stack outlet emissions are less than 0.00015 pound per hour based on source test
- Approach is generally consistent with Rules 1420.1 and 1420.2
  - Rules 1420.1 and 1420.2 require initial and annual source testing
  - Biennial source testing allowed if half the emission rate

Additional Provisions to Ensure Compliance with Lead Point Source Control Requirements

- Source test verifies that pollution control is meeting lead point source requirements (control efficiency or emission rate and capture efficiency) – provides a “snap shot”
- To better ensure continuous compliance of point source requirement, PAR 1420 will require:
  - Measurement of inward velocity of pollution control equipment
  - Measure pressure drop across filter using a continuous data logger to ensure operation of pollution controls are within acceptable range of pressure across filter
  - Baghouse Leak Detection System Considering a provision to properly maintain pollution control equipment

Comparison Between Current Rule 1420 and PAR 1420 Source Testing Requirement

Source Testing Requirement	Rule 1420	PAR 1420
Source testing	None if operator can demonstrate in Compliance Plan emissions (point and fugitive) < 0.5 pound/day	Require all facilities to source test
Frequency of source test	Initial source test if not exempt	• Initial • Every other year • Every third year if half the lead emission standard
Other provisions	Maintain pollution control equipment in accordance with manufacturer's specifications	• Same as 1420 plus • Inward velocity of pollution control • Pressure drop across filter • Baghouse leak detection system

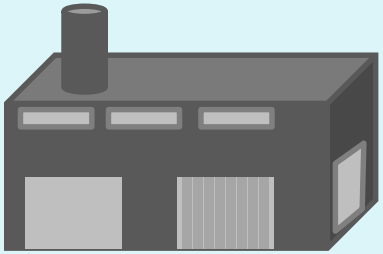
Enclosures – Current Rule 1420

- Rule 1420 currently does not have provisions that require lead processing activities occur within a building enclosure
- Building enclosures provide a “secondary” containment of fugitive emissions

Enclosures – PAR 1420

- Require total enclosures for areas processing lead
  - Total enclosure consists of permanent containment structure, completely enclosed with a floor, walls and a roof to prevent exposure to elements, with limited openings to allow access and egress (of people and vehicles)

Total Enclosure



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

Survey Data Collection of PAR 1420 Facilities

- Purpose of survey to be conducted by SCAQMD staff:
  - Characterize the universe of facilities involved in metal processing operations
  - Evaluate the types of metals processed
  - Evaluate conditions under which metal-processing operations are currently conducted (outside, partial or total enclosure)
  - Evaluate the level of existing lead controls
  - Estimate the cost associated with Rule Amendment

Next Steps

Action	Target Dates
Next Working Group Meeting	May 2017
Continue Field Visits	2nd Quarter 2017
Public Workshop	2nd or 3rd Quarter 2017
Set Hearing/Public Hearing	Oct/Nov 2017