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SANTA BARBARA COUNTY

DRAFT RULE 363, PARTICULATE MATTER CONTROL DEVICES

Joint Workshop/Community Advisory Council
Santa Barbara County
Air Pollution Control District

Our Mission: To protect the people and the environment of Santa Barbara County from the effects of air pollution.

Aeron Arlin Genet
Director / APCO

Timothy Mitro, Air Quality Engineer
April 28, 2021

PRESENTATION TOPICS

1) Background Information
   - Particulate Matter (PM) Health Effects
   - Assembly Bill 617 – Best Available Retrofit Control Technology (BARCT)
   - Baghouses
2) Rule 363 Requirements
3) Rule 363 Industry and Emission Impacts
4) Rule 363 Development Timeline

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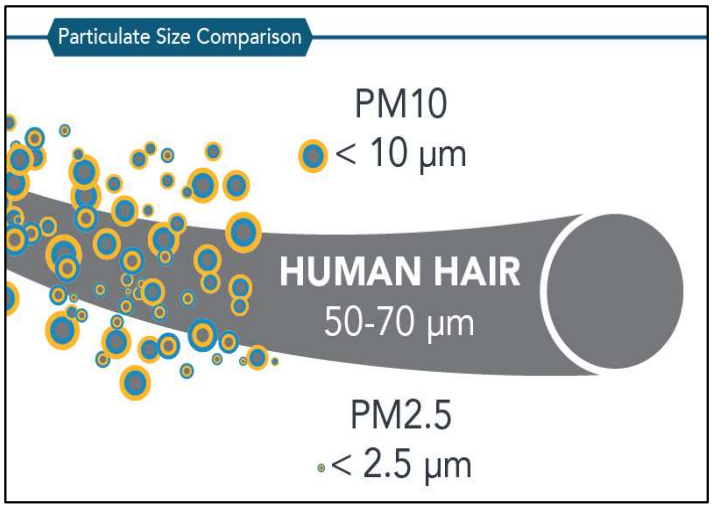
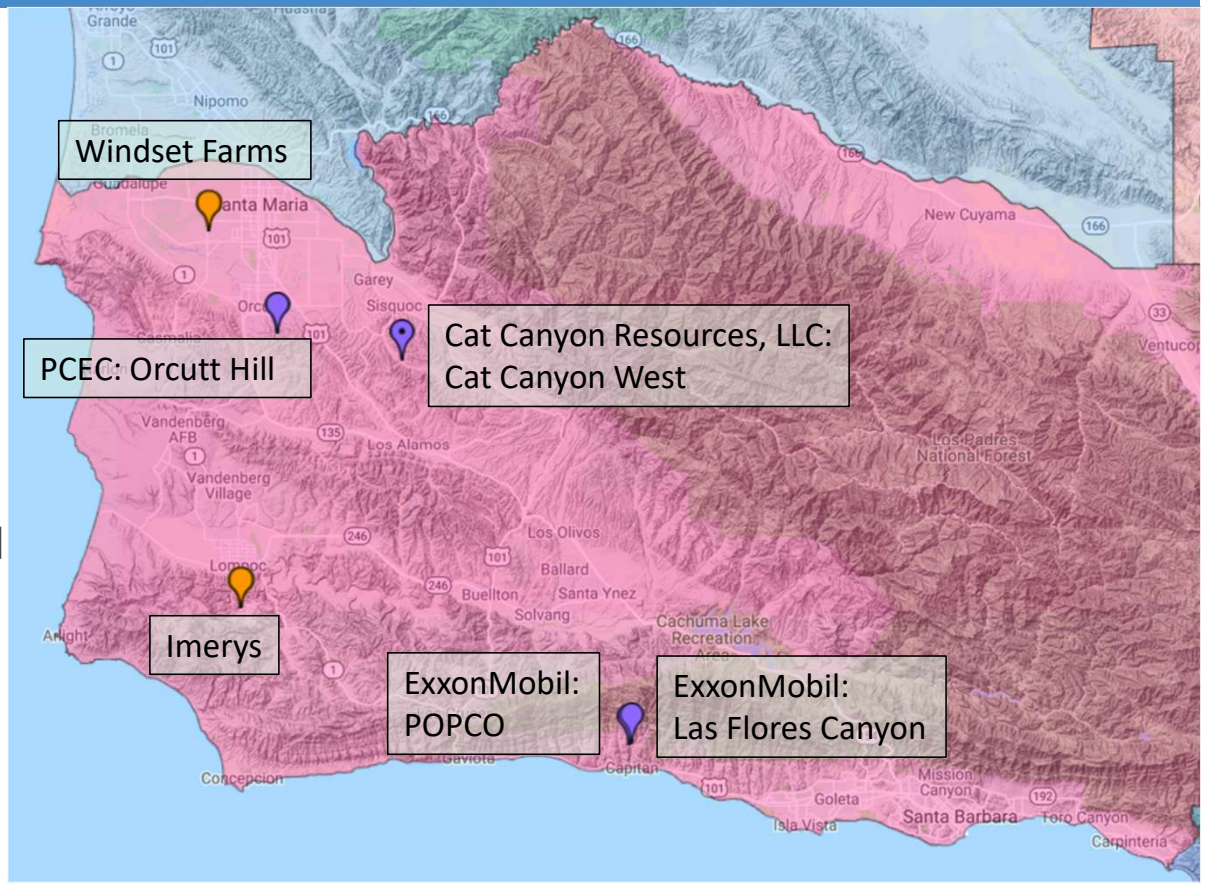
BACKGROUND: PARTICULATE MATTER

- Particulate Matter has been shown to cause nose and throat irritation, asthma aggravation, bronchitis, and heart attacks.
- District measures both PM_{10} and $PM_{2.5}$ at monitoring sites throughout the County.
- District is nonattainment for the state PM_{10} standard.



BACKGROUND: ASSEMBLY BILL (AB) 617

- Enacted in 2017 for Community Air Protection.
- BARCT applies to large industrial sources subject to Cap-and-Trade (>25,000 metric tons/yr of GHGs as of 1/1/2017).
- BARCT requires the maximum degree of emission reductions, taking into account environmental and economic impacts.
- Rule Development Schedule adopted by Board in 2018.

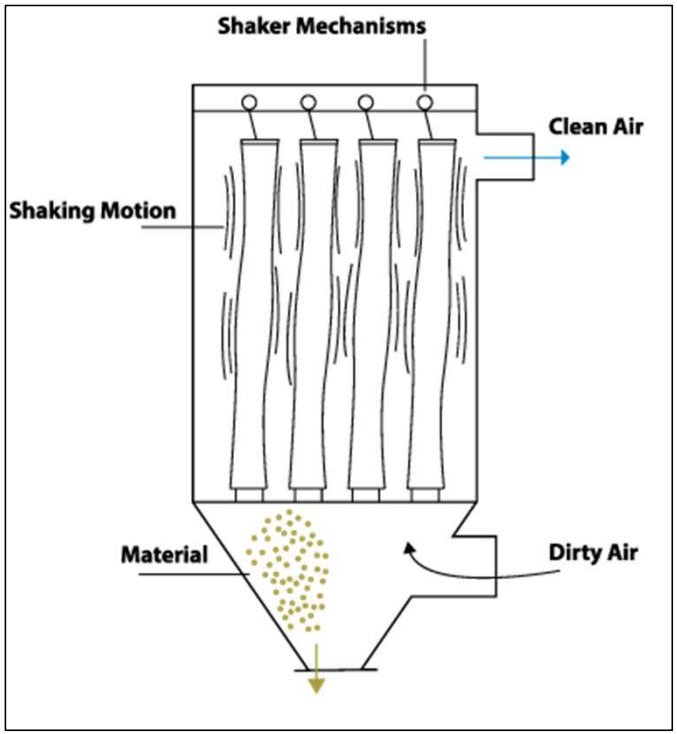


BACKGROUND: BAGHOUSES

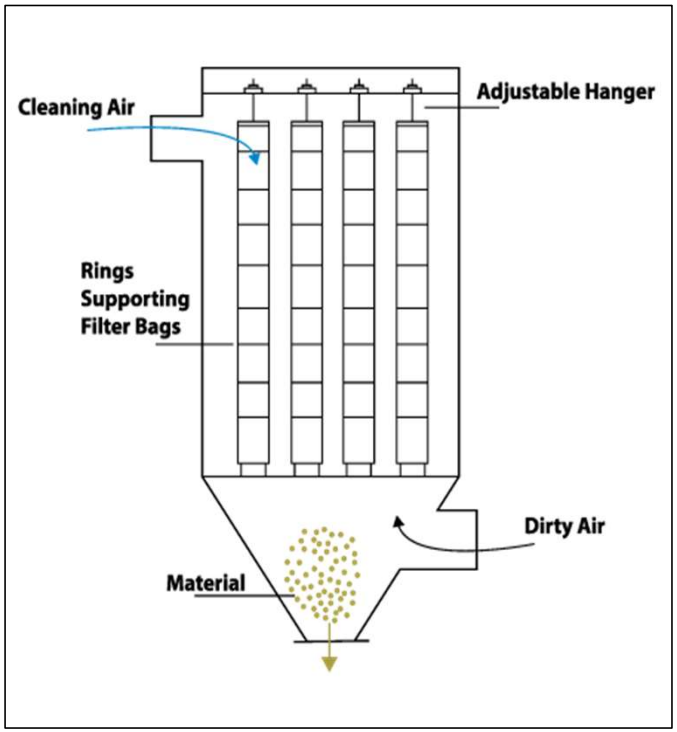
- Baghouses use filter media to capture approximately 99% of PM emissions.
- Used in various industries such as concrete batch plants, metal grinding, food processing, etc.
- Filter material [polyester, Teflon, fiberglass, etc.] depends on process application.

Bag Filters

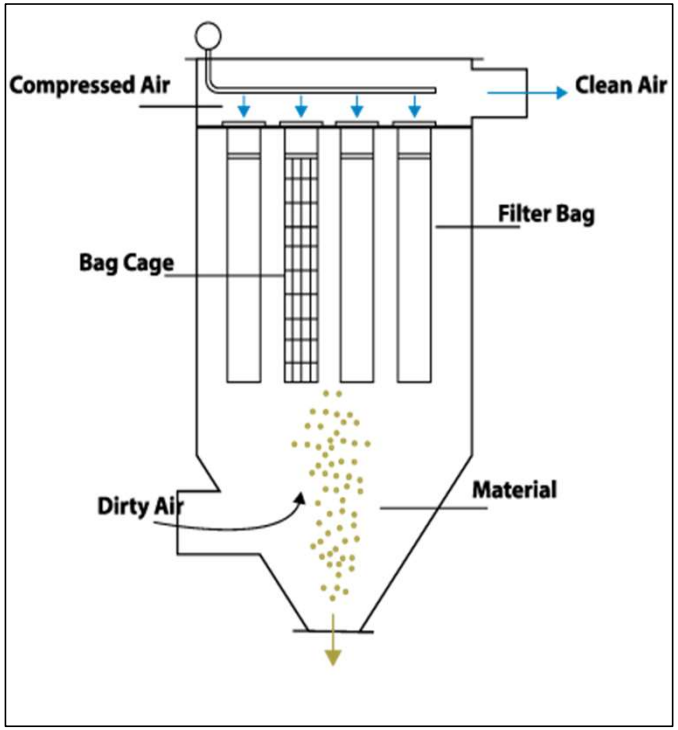
BACKGROUND: BAGHOUSE CLEANING



Shaker System



Reverse Air System



Pulse Jet System

RULE REQUIREMENTS

- Draft Rule 363 – PM Control Devices
  - Rule language based on South Coast AQMD Rule 1155 (as adopted in 2009)

  - Main rule requirements are as follows:
    1) **All Units:** No Visible Emissions
    2) **Smaller Units:** Weekly Observations – EPA Method 22
    3) **Tier 2 Baghouses:** BARCT Emission Rate & Source Tests
    4) **Tier 2 Baghouses:** Bag Leak Detection Systems (BLDS)

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RULE REQUIREMENTS

Opacity Examples

- No visible emissions
  - If device emits visible emissions, corrective action is needed within 24 hours
- EPA Method 22
  - 6 minute “Yes/No” test
  - Operator needs to understand basic principles of EPA visual observations

RULE REQUIREMENTS: TIER 2 BAGHOUSES

Category	Description
Tier 1 Baghouses	Less than 7,500 ft^2 filter area
Tier 2 Baghouses	7,500+ ft^2 filter area

- Tier 2 Baghouses
  - BARCT emission standard of 0.005 grains per dry standard cubic foot (gr/dscf).
  - Emission standard has been BACT (Best Available Control Technology) for new devices for the last 2 decades.
  - Units would need to be source tested once every five years.

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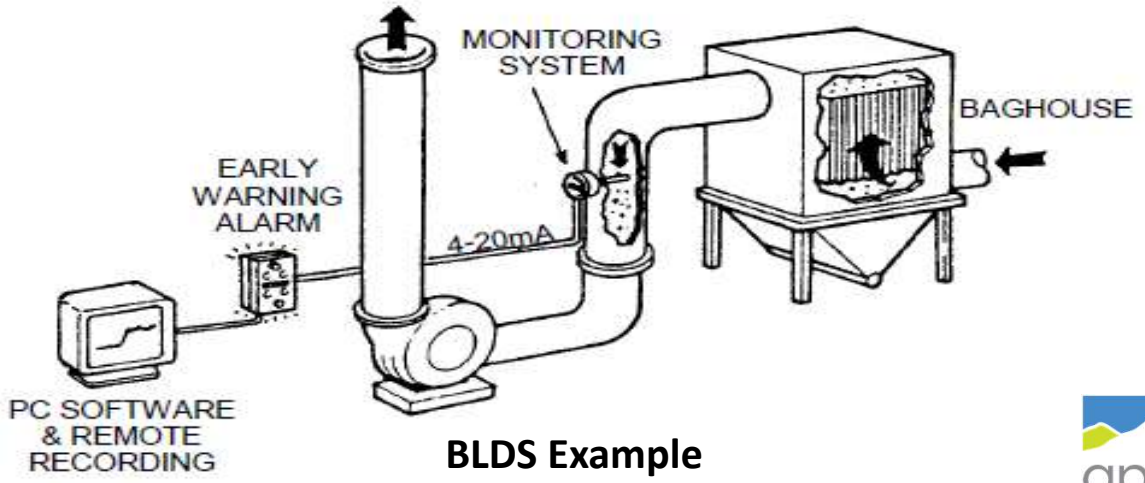
RULE REQUIREMENTS: TIER 2 BAGHOUSES

- Bag Leak Detection System (BLDS)
  - Continuous monitoring of particles in exhaust.
  - Useful to detect bag leaks and similar bag failures.
  - If alarm is received, operator has 3 hours to fix the issue.



BLDS Example

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RULE EXEMPTIONS

Section	Description	Exempt From
B.1	• Spray Booths	• Entire rule
B.2	• Very Small Units (<100 ft^2 filter area) • Portable Units • HEPA Systems	• Entire rule (except "No Visible Emissions")
B.3	• Inactive Equipment	• Entire rule (except Compliance Plan)
B.4	• Bin Vents • Non-continuous Processes • Devices with BLDS	• Weekly Method 22
B.5	• Startup Operations (up to 45 mins)	• "No Visible Emissions" • Weekly Method 22 • Emission Limit and BLDS
B.6	• 1st PM Control Device in series ("Pre-cleaners")	• Weekly Method 22 • Emission Limit and BLDS

RULE IMPACTS: IMERYS

- Diatomaceous earth powders are used as filtration aids and various other industrial uses.

Diatomaceous Earth

- Imerys mines, crushes, conveys, dries, and bags the diatomaceous earth.
- Facility uses over 60 different PM control devices.
(Baghouses, Cyclones, Wet Scrubbers)

ESTIMATED EMISSION REDUCTIONS

Rule Benefit	Emission Reductions
1) Early Detection & Repair	Not quantified
2) Modernization of Tier 2 Open Sock Baghouses	About 32 tons PM_{10} per year

Device Name	No. of Bags	Diameter (in)	Height (ft)	Total Cloth Area (ft^2)
Open Baghouse #1	168	9.0	48.0	19,000
Open Baghouse #2	168	9.0	48.0	19,000

ESTIMATED COSTS

Requirement	# of Affected Units	Cost per Affected Unit	Total Cost	Cost-Effectiveness ($/ton)
Baghouse Modernization: Open Sock Baghouses	2	$460,000	$920,000	$1,400 - $4,400
Baghouse Modernization: Manual Shaker Systems	0	$12,500	$0	N/A
BLDS installation	6	$12,500	$75,000	Included in Open Sock BH calc. N/A for others.
Source Tests	4	$5,000 every 5 years	$20,000 every 5 years	
Weekly Method 22	50	$500 every year	$25,000 every year	N/A

RULE DEVELOPMENT TIMELINE

- Industry Review
  - Draft Rule sent in September 2020
  - Draft Staff Report sent in November 2020
  - Initial industry comments received in December 2020
  - Updated Draft Rule and Staff Report sent in March 2021
- Joint Workshop/CAC Meeting
  - Public Comments and Questions
  - CAC Questions, Discussion, and Recommendation
- District Board Hearing
  - Tentatively scheduled for June 2021

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WRITTEN COMMENTS

- Please submit any written comments by **May 12, 2021**.

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Timothy Mitro, AQ Engineer
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- Written comments and responses will be included in the package brought to the Board of Directors.

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