

# Precision Castparts

## *Air Quality Public Meeting*

*March 18, 2020*



# Agenda

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- Welcome
- Introductions
- Public Health Assessment + Q&A
- Statewide Air Toxics Summary Report + Q&A
- Cleaner Air Oregon Status + Q&A
- Air Quality Permit Status + Q&A
- Discussion and Next Steps

# Ground Rules

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- Be respectful of each other and agency representatives
- Speak when recognized
- Allow people who have not had a turn to pose one question before others ask additional questions
- Speak for yourself
- Don't interrupt

# Staff Online Tonight with a Formal Role

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- Nina DeConcini, DEQ NW Region Administrator
- Todd Hudson, OHA Toxicologist
- Scott Peerman, DEQ Lab
- Kenzie Billings, DEQ Cleaner Air Oregon
- David Graiver, DEQ Air Quality Permit Writer
- Lauren Wirtis, DEQ Communications

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# Precision Castparts Corp. Public Health Assessment (final release)

[Ehap.info@state.or.us](mailto:Ehap.info@state.or.us)



ENVIRONMENTAL PUBLIC HEALTH ASSESSMENT PROGRAM (EHAP)

[www.healthoregon.org/ehap](http://www.healthoregon.org/ehap)

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# Overview

- What is a public health assessment (PHA)?
- Public comments
- Overview of changes to PHA
- How does this relate to Cleaner Air Oregon?
- Comments/questions

# AGENCY ROLES

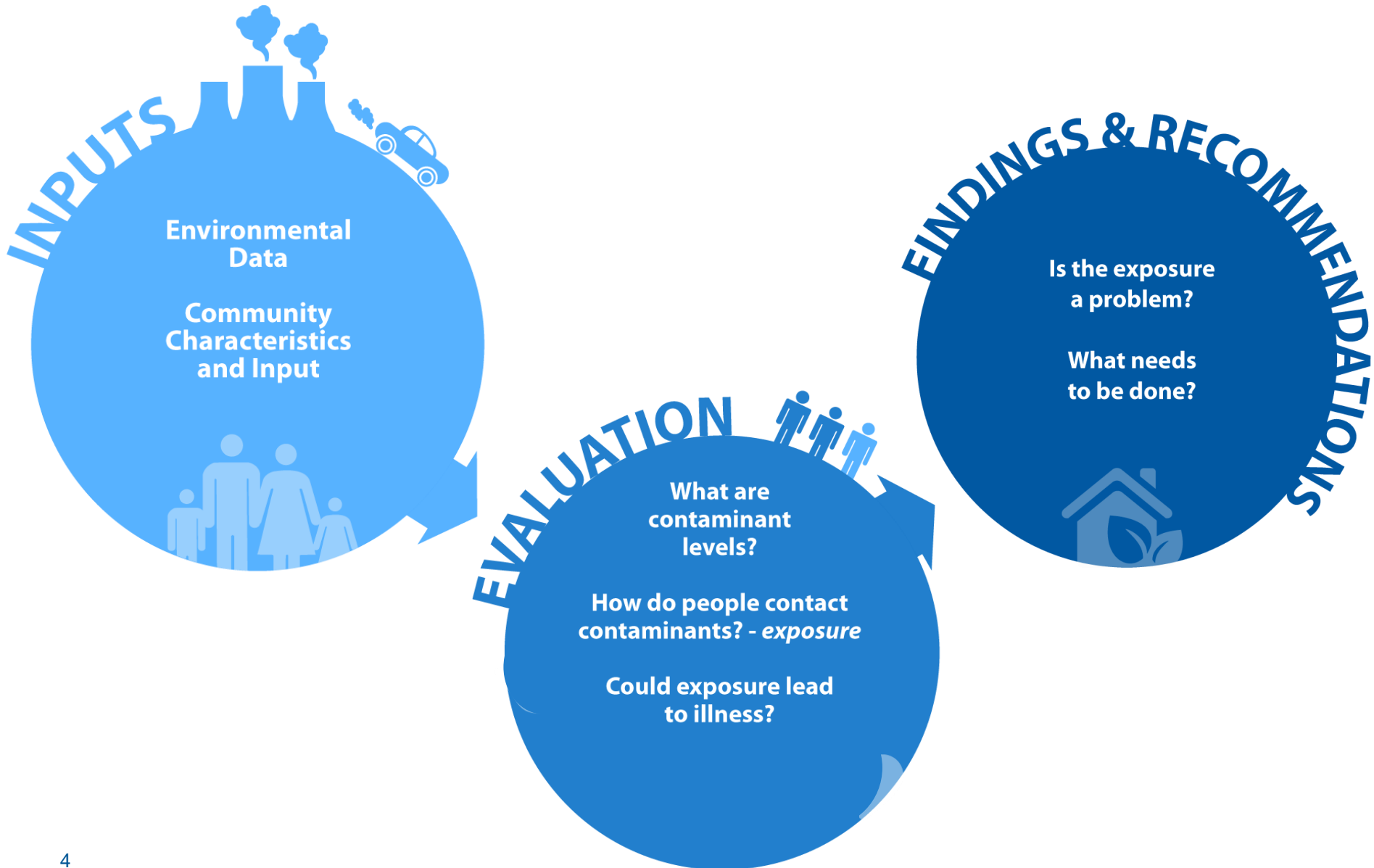


Analyze  
Advise  
Make recommendations



Monitor  
Permit  
Regulate

# What is a Public Health Assessment?





# TIMELINE OF EVENTS



**2013:  
Moss  
Sampling**

\* Under oversight of DEQ Clean-up Program

# Risk Calculations

## Exposure

Frequency, duration and amount of exposure to each chemical

## Hazard

Toxicity information on each chemical



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graph TD; Exposure[Exposure] --> HealthRisk[Health Risk]; Hazard[Hazard] --> HealthRisk;
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## Health Risk

- Cancer Risk
- Non-cancer Risk

# Public comments

- We heard from many people and groups
- All comments were captured in an appendix, and we responded to every question
- Technical consultant reviewed document
- We heard from people requesting more data
  - More data were available

# New data

- DEQ monitoring: 45<sup>th</sup> and Harney
  - Provided a longer period that more likely reflect actual conditions
  - Levels of risk did not change significantly
  - Through December 2017
  - Data consistent with earlier DEQ data

# New data (continued)

- PCC Monitoring
  - Collected by a environmental consulting firm
  - Monitor placed in parking area south of Large Parts Campus
  - Collected air samples daily, October 2017-October 2018
  - Data consistent with DEQ data

## New data (continued)

- Portland State University STAR Lab
  - A research project measured metals in residential areas near Large Parts Campus
  - April through June 2017
  - We reviewed the findings of their report, and included it in the PHA
  - “Levels of metals were not elevated during the sampling period”
  - “This level of arsenic [is consistent] throughout the Portland area”

# Conclusions

- No impact to health
  - Air (using additional data)
  - Soil, surface water, sediment, and biota (crayfish)
- Insufficient information about historical air emissions prior to installation of air control devices

# Cleaner Air Oregon (CAO)

- **The Public Health Assessment and CAO were independent efforts that have many similarities and were undertaken at different times.**
  - **Prior to CAO, the Public Health Assessment process was the best tool to protect health**
  - **Both are site-specific to protect nearby populations**
- **In October 2019, PCC's Large Parts Campus was required to participate in the CAO process. They will be required to model how their emissions will affect areas around their facility.**



# Questions?

**Todd Hudson, OHA Toxicologist**  
**Email: [todd.hudson@state.or.us](mailto:todd.hudson@state.or.us)**

# Statewide Air Toxics Summary Report



State of Oregon  
Department of Environmental Quality

# What we did

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- 6 locations (including SE 45<sup>th</sup> & Harney) measuring ambient air
- 60 samples taken (1 every six days for a year)
- Tested for 109 air toxics
- Compared annual average to benchmarks (health-based goals) and typical city levels

# General Findings

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- Results showed that no air toxics were found at levels that would pose an immediate health risk
- 6 air toxics were above health-based goals at all locations (urban and rural)
- Ethylbenzene above health-based goals in Portland Metro Area (likely due to more cars)

# SE 45<sup>th</sup> & Harney Findings

| Pollutant            | SE 45 <sup>th</sup> & Harney<br>(xABC) | Average City<br>(xABC) |
|----------------------|--|------------------------|
| Arsenic              | 3.4                                    | 3.7                    |
| Benzene              | 3.8                                    | 5.2                    |
| Carbon tetrachloride | 2.5                                    | 2.9                    |
| Ethylbenzene         | 1.8                                    | 6.2                    |
| Naphthalene          | 1.6                                    | 1.9                    |
| Acetaldehyde         | 3.4                                    | 3.7                    |
| Formaldehyde         | 9.9                                    | 15.6                   |

# What's next

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- DEQ will use this data to inform strategies for reducing air toxics.
- DEQ will continue collecting data around the state, moving the temporary monitors to new locations

# Questions?



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# Cleaner Air Oregon



State of Oregon

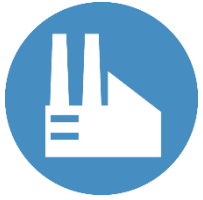
DEQ

Department of Environmental Quality



# Cleaner Air Oregon – How it Works

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## **Report air toxics**

Existing facilities report use of over 600 pollutants to state regulators



## **Assess risk**

Facilities calculate potential air toxics health risks to people who live, work, and go to school nearby



## **Regulate to reduce risk**

Facilities would have to act if the levels of air toxics they emit exceed health risk action levels (RALs)

# Program Scope

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- Applies to “new” and “existing” facilities with AQ permits.
- Cumulative, facility-wide risk assessment
- Health risks evaluated:
  - Cancer (annual)
  - Noncancer – short-term (24 hour) and long-term (annual)
- 4 “tiers” of risk assessments (simple to complex)
- DEQ went through a prioritization process for existing facilities

# CAO Prioritization Process

## Emissions Data:

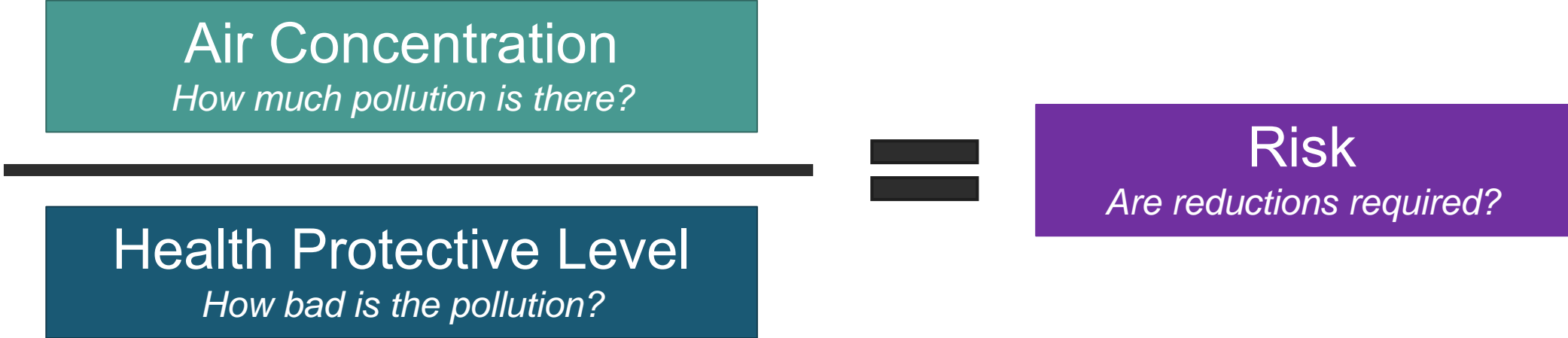
- 2017 reported emissions on >630 air toxics
  - DEQ reviewed to ensure best available data

## Prioritization Score:

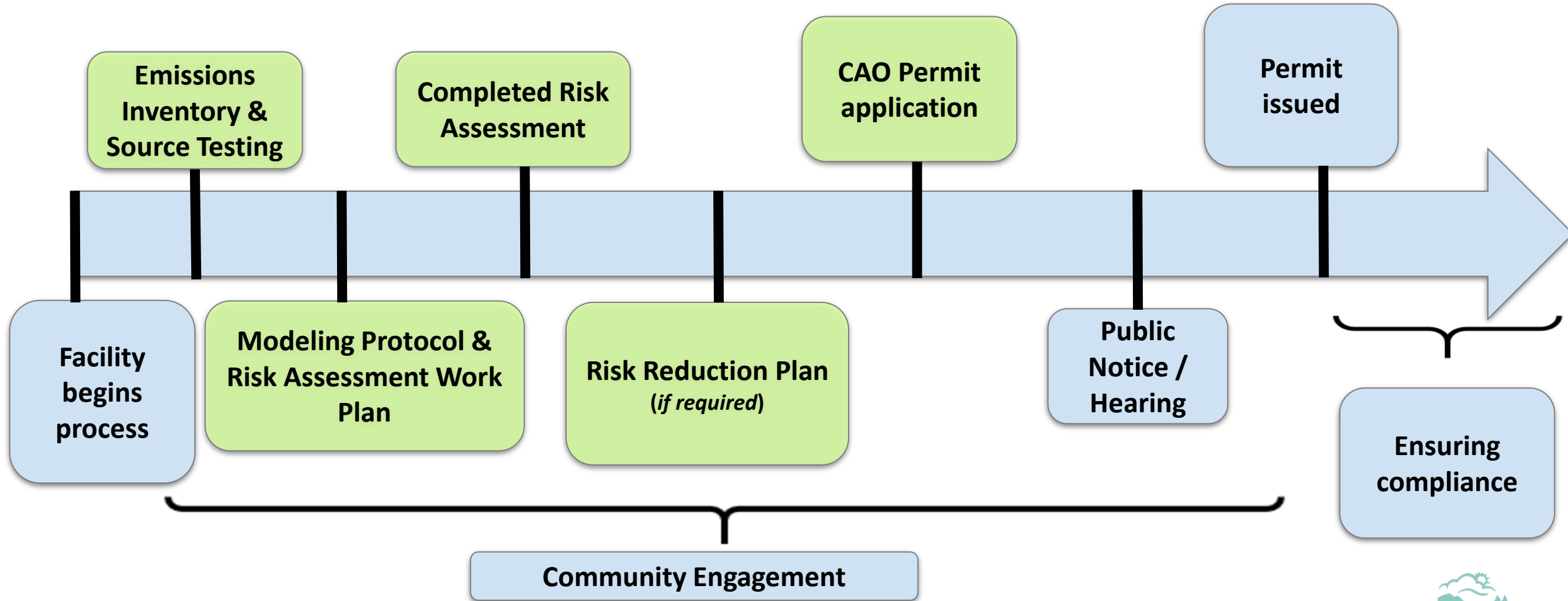
- Quantitative:
  - DEQ performed risk screening from reported emissions
- Demographic:
  - DEQ included population information within 1 km (0.62 mile) radius
- Qualitative:
  - DEQ considered data quality, controls, distance to nearest homes

# CAO Risk Assessment Basics

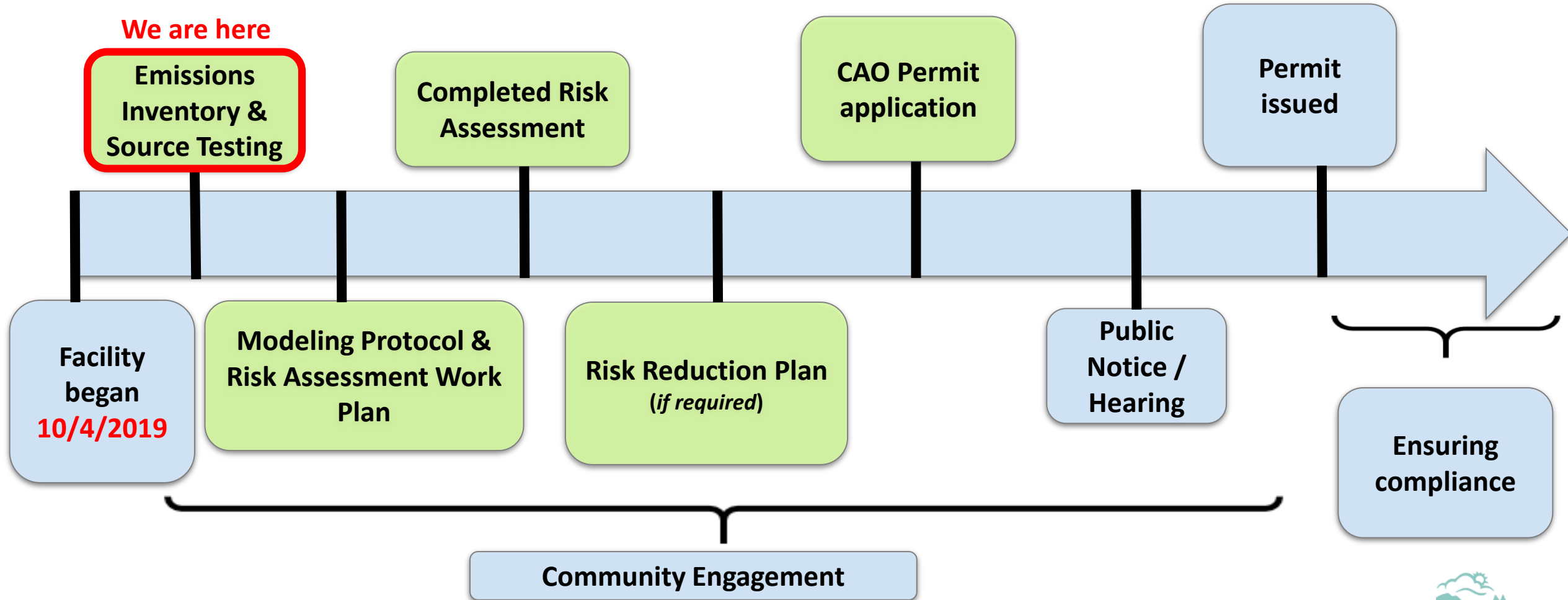
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# CAO Permitting Process



# Precision Castparts CAO Status



# Precision Castparts Emissions Inventory


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- What was submitted
  - Over 160 tables of emissions calculations
- What DEQ is requesting
  - Detailed facility diagram and process flow diagrams
  - Clarification on changes in production
    - 2018 vs. Potential to Emit
  - Supporting data (Safety Data Sheets, performance data, engineering testing, waste manifests, etc.)
  - Supporting calculations (engineering estimates, etc.)
  - Reference materials

# Cleaner Air Oregon



## Background and Overview

- [Cleaner Air Oregon fact sheets](#)
- [Cleaner Air Oregon Rules](#)
- [CAO Rules Tables](#) 
- [CAO Regulatory Overhaul](#)
- [Ask a Question](#)



## CAO Hazard Index Rulemaking

- [CAO Hazard Index Rulemaking 2019](#)
- [Overview of Proposed Hazard Index Rules](#) 
- [Infographic of Hazard Index Rulemaking](#) 
- [How Do Agencies Determine What Is A Health Risk?](#) 
- [Protecting Against Noncancer Health Risk](#) 



## For Community

- [Facilities Conducting CAO Health Risk Assessments](#)
- [How Risk Action Levels Work](#) 
- [Plan for Community Engagement Protocols](#) 
- [Map of DEQ Permitted Facilities](#)
- [Sign up for Updates](#)



## For Facilities

- [CAO Permitting Requirements](#)
- [Risk Assessment Resources](#)
- [Facility Call-in Prioritization Report](#) 
- [CAO Call-in Prioritization Details](#)
- [Emissions Inventory](#)



# Questions?



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# Air Quality Permit Status



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# Air Quality Permit

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- **What does an Air Quality Permit Do?**
  - Emission Limits
  - Operational Limits/Requirements
  - Monitoring Requirements
  - Recordkeeping Requirements
  - Reporting Requirements
- **Contract between State and the Source**

# Air Quality Permit Requirements

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- **Emissions limits**
  - **Annual Plant Site Emission Limits for:**
    - Particulate Matter
    - Nitrogen Oxides
    - Carbon Monoxide
    - Sulfur Oxides
    - Volatile Organic Compounds
    - Single and Combined Hazardous Air Pollutants

# Air Quality Permit Requirements

- **Plant Site Emissions limits**

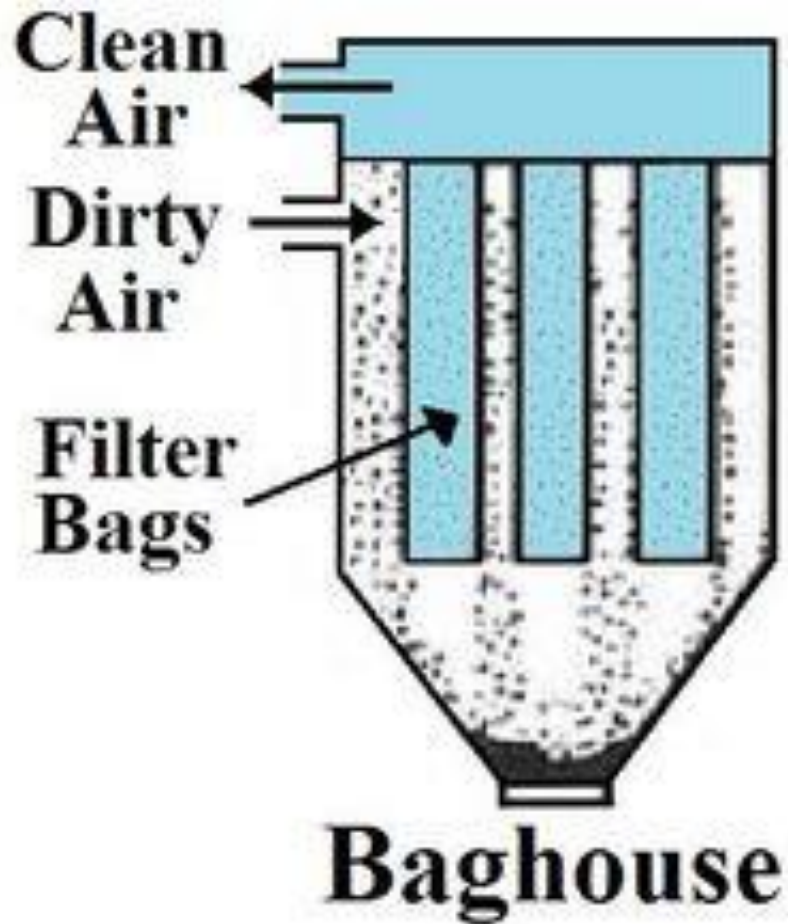
| Pollutant                         | Limit | Units         |
|-----------------------------------|-------|---------------|
| Particulate Matter                | 83    | tons per year |
| PM <sub>10</sub>                  | 54    | tons per year |
| Sulfur Dioxide                    | 39    | tons per year |
| Nitrogen Oxides                   | 58    | tons per year |
| Carbon Monoxide                   | 99    | tons per year |
| Volatile Organic Compounds        | 99    | tons per year |
| Single Hazardous Air Pollutant    | 9     | tons per year |
| Combined Hazardous Air Pollutants | 24    | tons per year |

# Air Quality Permit Requirements

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- **Operational/Monitoring Requirements**
  - **Baghouse Operation (filter)**
    - 99% removal efficiency
    - Operating differential pressure
  - **Thermal Oxidizer (burn up hazardous air pollutants)**
    - Minimum operating temperature
    - 90% combined capture and control from investment casting

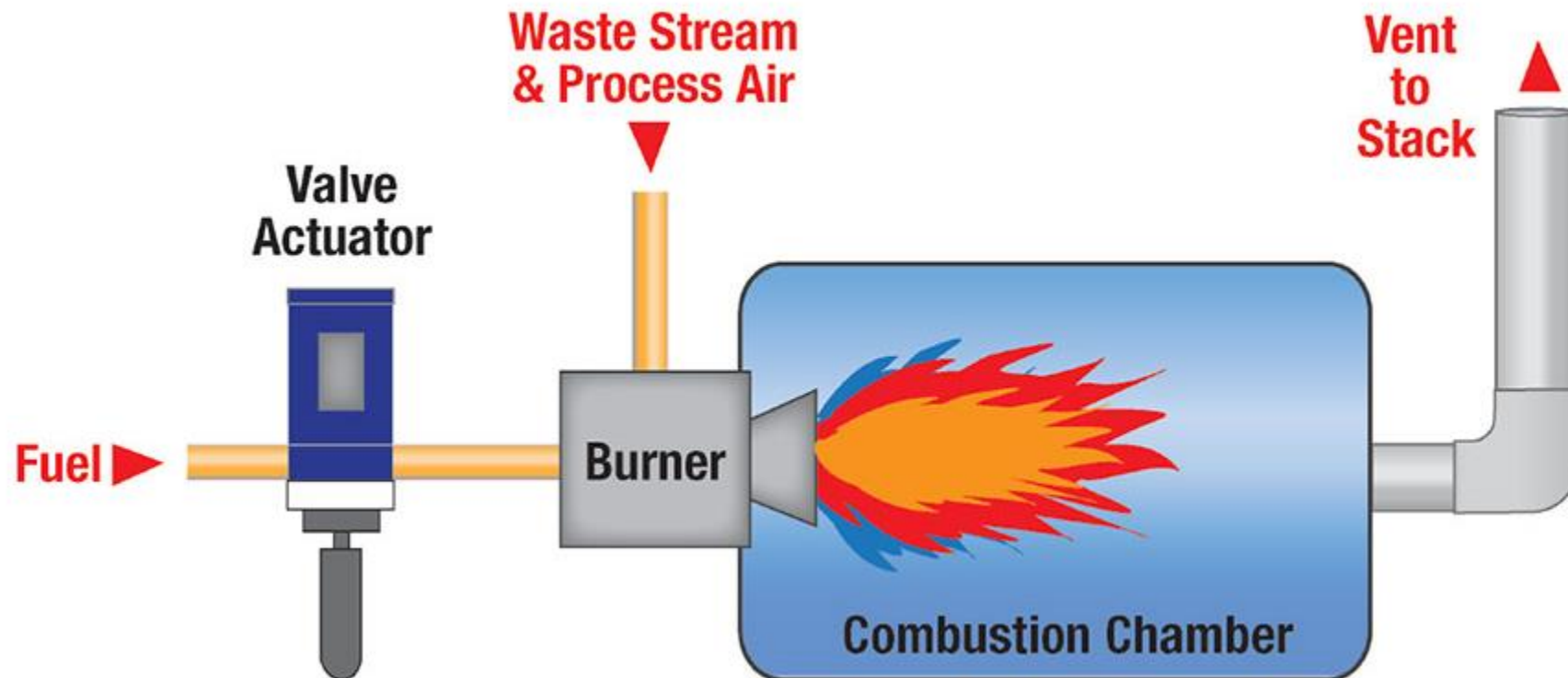
# Air Emissions Control - Baghouse



- Controls Particulate Matter (Metals)
- PCC must monitor operating differential pressure
  - Too high: filters may be plugged
  - Too low: bag may be torn

# Air Emissions Control – Thermal Oxidizer

- Controls Volatile Organic Compounds (e.g., Isopropyl Alcohol)
- PCC must monitor temperature





# Air Quality Permit Requirements

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- **Monitoring Requirements**
  - **Source testing:**
    - Determine compliance with % removal efficiency limits
    - Verify emission factors used for PSEL compliance
    - Testing is done by a 3<sup>rd</sup> party
    - Renewal air quality permit will require source testing

# Air Quality Permit Requirements

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- **Recordkeeping Requirements**
  - Monitoring performed
  - Control equipment design specs
  - Production records
  - PSEL compliance
- **Reporting Requirements**
  - Annual reporting
  - Excess emission reporting
  - Notice of Intent to Construct

# Air Inspections

- **September 9, 2010**
- **March 5, 2015**
- **September 21, 2017**
- **July 18, 2018**
- **September 26, 2018**
- **April 25, 2019**
- **December 17, 2019**
- **No Violations Observed**



# Air Quality Permit

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- Working on permit renewal
  - ID all units
  - Incorporate new controls
  - Determine appropriate monitoring and testing
- Coordination with Cleaner Air Oregon
  - Testing
  - Public comment period

# Questions?



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# Next Steps

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DEQ will continue to reach out and provide updates

# Thank you!

**OHA Public Health Assessment: Todd Hudson | (971) 673-0024**

**Statewide Air Toxics Summary: Scott Peerman | (503) 693-5782**

**Air Quality Permit: David Graiver | (503) 229-5690**

**Cleaner Air Oregon: Kenzie Billings | (503) 229-5247**



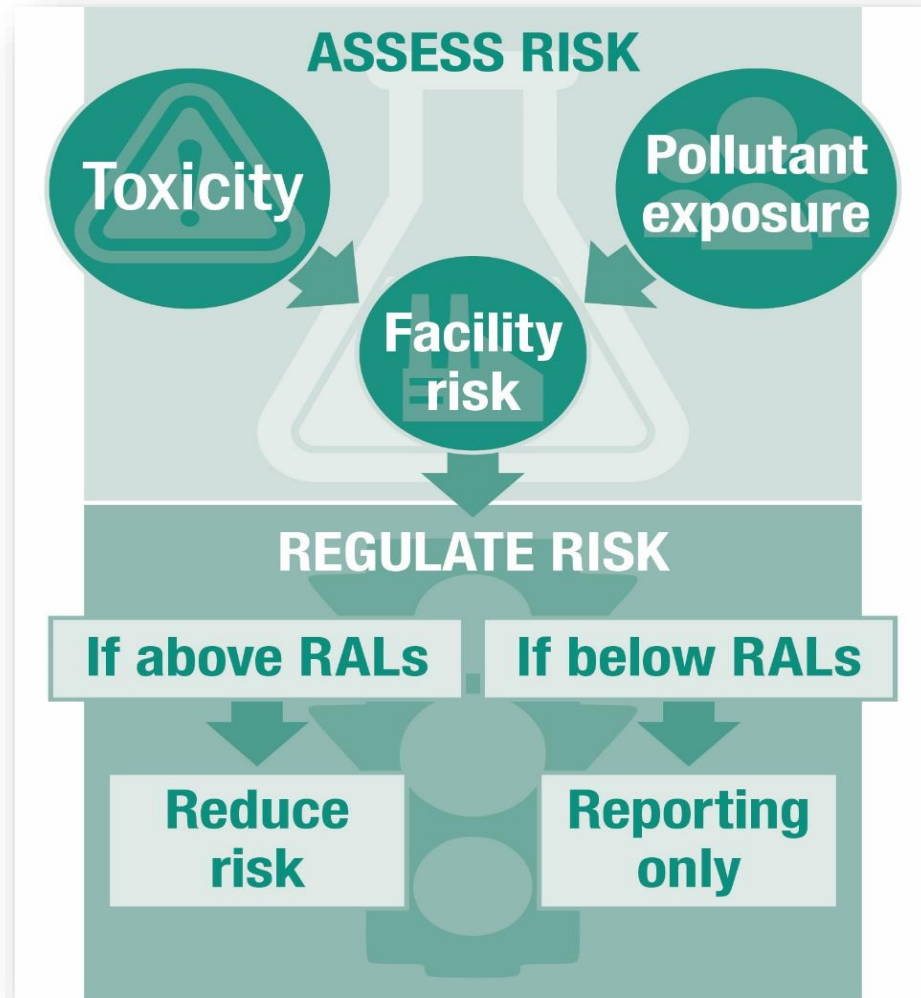
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# Air Emissions Control - Baghouse

- PCC added HEPA filtration to baghouses
  - High Efficiency Particulate Air
  - Remove 99.97% of airborne particles  $\geq 0.3$  microns
  - 0.3 microns  $\approx 0.000\ 012$  inches
- Recent modifications include ULPA filtration
  - Ultra Low Particulate Air
  - Remove 99.999% of airborne particles  $\geq 0.1$  microns
  - 0.1 microns  $\approx 0.000\ 004$  inches

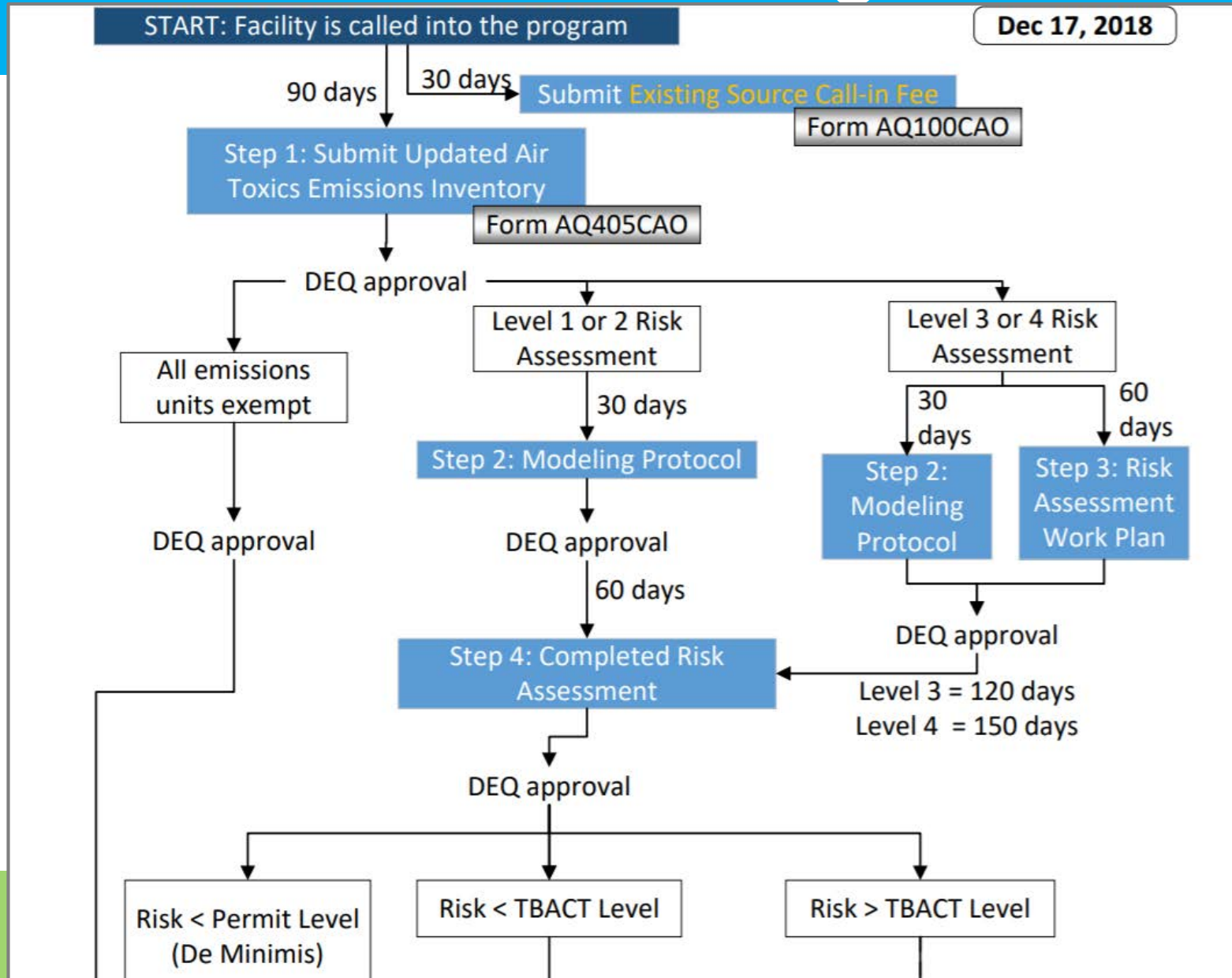


# Risk Action Levels

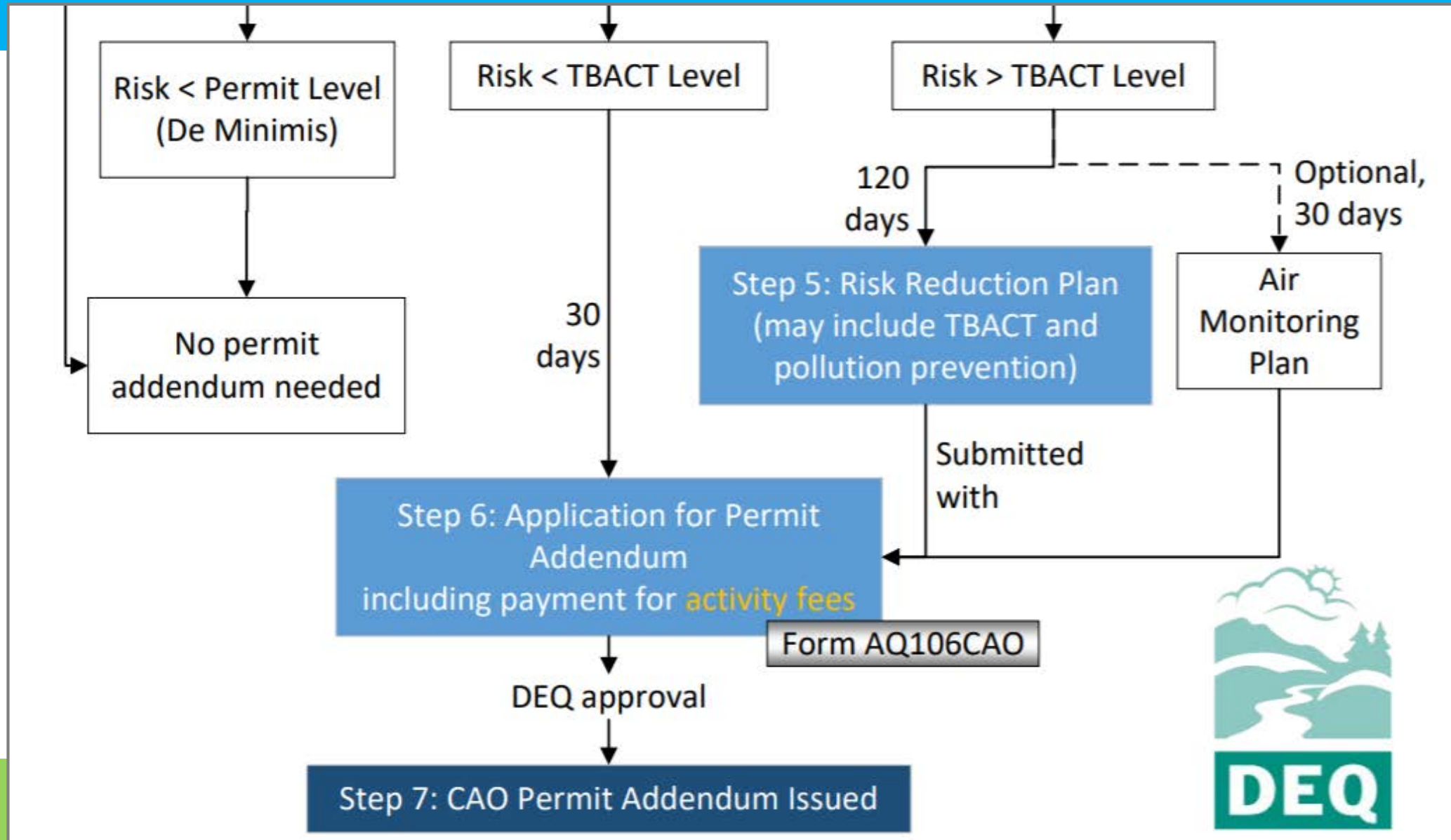


- Establish health protective risk limits
- Reported differently for cancer and noncancer health effects
  - Excess cancer per million
  - Hazard index
- Different levels for new and existing facilities

# Timelines for existing facilities

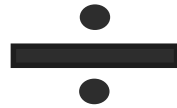


# Timelines for existing facilities



# CAO Risk Assessment Basics

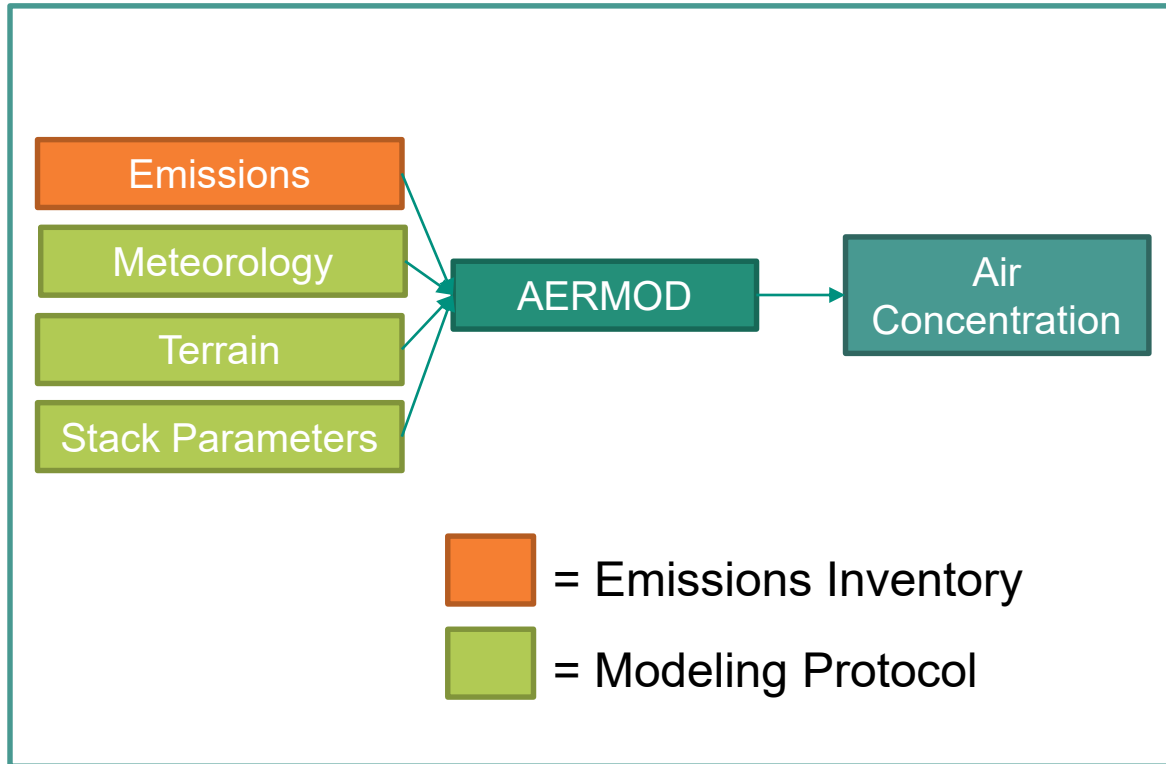
Air Concentration



Risk-Based Concentration



Risk



**OAR 340-245-8040**  
**Table 4 - Risk-Based Concentrations**

| CAS# <sup>b</sup> | Chemical      | Notes | Residential Chronic     |                             | Non-Residential Chronic       |                                   |                                | Acute                              |                             |
|-------------------|---------------|-------|-------------------------|-----------------------------|-------------------------------|-----------------------------------|--------------------------------|------------------------------------|-----------------------------|
|                   |               |       | Cancer RBC <sup>a</sup> | Non-cancer RBC <sup>a</sup> | Child Cancer RBC <sup>a</sup> | Child Non-cancer RBC <sup>a</sup> | Worker Cancer RBC <sup>a</sup> | Worker Non-cancer RBC <sup>a</sup> | Non-cancer RBC <sup>a</sup> |
|                   |               |       | (µg/m <sup>3</sup> )    | (µg/m <sup>3</sup> )        | (µg/m <sup>3</sup> )          | (µg/m <sup>3</sup> )              | (µg/m <sup>3</sup> )           | (µg/m <sup>3</sup> )               | (µg/m <sup>3</sup> )        |
| 75-07-0           | Acetaldehyde  |       | 0.45                    | 140                         | 12                            | 620                               | 5.5                            | 620                                | 470                         |
| 60-35-5           | Acetamide     |       | 0.050                   |                             | 1.3                           |                                   | 0.60                           |                                    |                             |
| 67-64-1           | Acetone       |       |                         | 31,000                      |                               | 140,000                           |                                | 140,000                            | 62,000                      |
| 75-05-8           | Acetonitrile  |       |                         | 60                          |                               | 260                               |                                | 260                                |                             |
| 107-02-8          | Acrolein      |       |                         | 0.35                        |                               | 1.5                               |                                | 1.5                                | 6.9                         |
| 79-06-1           | Acrylamide    | g     | 0.0059                  | 6.0                         | 0.062                         | 26                                | 0.12                           | 26                                 |                             |
| 79-10-7           | Acrylic acid  |       |                         | 1.0                         |                               | 4.4                               |                                | 4.4                                | 6,000                       |
| 107-13-1          | Acrylonitrile |       | 0.015                   | 5.0                         | 0.38                          | 22                                | 0.18                           | 22                                 | 220                         |
| 309-00-2          | Aldrin        |       | 0.00020                 |                             | 0.0053                        |                                   | 0.0024                         |                                    |                             |