

# Air Quality Permitting Updates 2022 Rulemaking

February 15, 2023

Regulated Facility Training

# Goals of Rulemaking

- Improve and strengthen our permitting program
- Increase permitting issuance efficiency
- Increase regulatory certainty



## Approved Air Quality Implementation Plans in Oregon



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# Implementation - effective date

**March 2023**



Oregon Secretary of State

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Department of Environmental Quality

Chapter 340

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19	20	21	22	23	24	25
26	27	28	29	30	31	

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# Agenda

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- Policy Changes
- Streamlining/Process Changes

# Policy Changes

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- Eliminate Generic Plant Site Emission Limits
- Change Type 1 Notice of Intent to Construct approvals
- Require air quality modeling for smaller increases in emissions
- Eliminate ability to operate without pollution control devices for 48 hours

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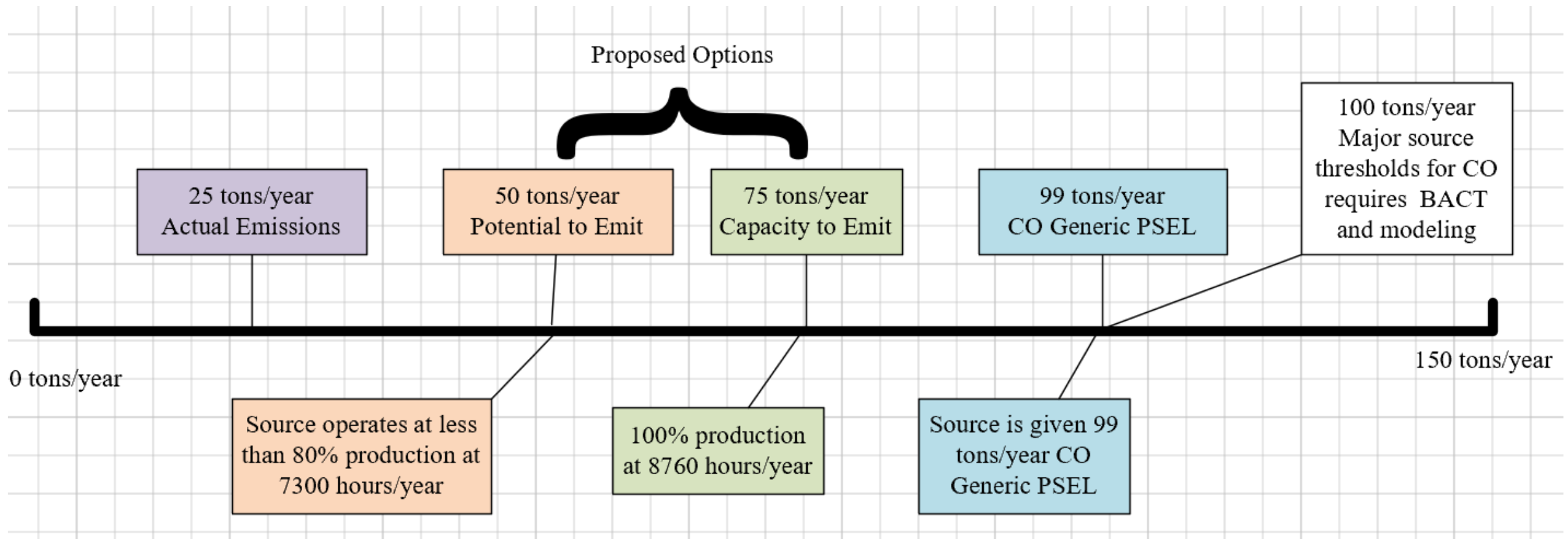
# Elimination of Generic Plant Site Emission Limits

# Why is DEQ eliminating Generic PSEs?

- Creates permits that more accurately reflect actual emissions, providing transparency for communities
- Provides more regulatory certainty regarding compliance with National Ambient Air Quality Standards
- Avoids over-allocation of air resources



# Example for Carbon Monoxide Generic PSEL





# Things to keep in mind

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- New Source Review
  - Simple ACDPs have no baseline
  - PSEL increase > Significant Emission Rate triggers NSR
- Modifications to increase PSELs incur fees and require public notice (\$1,800 to \$9,000)

# Implementation - effective date **03/01/2023**

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- Sources with Generic PSELS will be required to submit emission calculations at capacity or PTE with permit renewal application or any mod that involves PSELS
- Source specific PSELS will be included for all permits (new, renewals and mods with PSEL changes) issued on or after 03/01/23

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# Notice of Intent to Construct Rule Changes

# NCs – before and after

Before rule adoption	Difference after rule adoption
Type 1 – 10-day default approval & less than or equal to de minimis	Notice and go; optional 30-day review of emissions, if requested
Type 2 – 60-day default approval & under SER	AQ modeling
Type 3 – permit mod & PSEL increase under SER	AQ modeling
Type 4 – New Source Review - PSEL increase over SER	no change

# NCs – before and after

Before rule adoption

After rule adoption

Type 1 – 10-day deferral  
than or equal to SER

Type 2 – 60-day deferral  
under SER

Type 3 – permit renewal  
under SER

Type 4 – New Source Review - PSEL  
increase over SER

Type 5 – 30-day review  
of permit

change

When determining NC  
Type (1 through 3), use  
capacity with  
enforceable limits

# Type 1 NCs

OAR 340-210-0225(1) Type 1 changes include construction or modification for which the owner or operator is **not required to obtain a permit or permit modification** under OAR chapter 340, division 216, and where the changes meet the criteria in either subsection (a) or (b):

(a) The construction or modification would:

(A) Have emissions from any new, modified, or replaced device or activity, or any combination of devices or activities, of **less than or equal to the de minimis levels** defined in OAR 340-200-0020;

....

(b) The construction or modification is **one of the following**:

....

# De Minimis Levels (OAR 340-200-0020(39))

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- (a) Greenhouse Gases (CO<sub>2</sub>e) = 2,756 tons per year
- (b) CO = 1 ton per year
- (c) NO<sub>x</sub> = 1 ton per year
- (d) SO<sub>2</sub> = 1 ton per year
- (e) VOC = 1 ton per year
- (f) PM = 1 ton per year
- (g) PM<sub>10</sub> (except Medford AQMA) = 1 ton per year
- (h) PM<sub>10</sub> (Medford AQMA) = 0.5 ton per year and 5.0 pounds/day
- (i) Direct PM<sub>2.5</sub> = 1 ton per year
- (j) Lead = 0.1 ton per year

# Notice and Go Equipment List

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## **OAR 340-210-0225(1)(b)**

The construction or modification is one of the following:

(A) Stationary internal combustion engines having a rated capacity <60 horsepower output;

(B) Emergency stationary internal combustion Tier 4 engines having a rated capacity <670 horsepower (500 kilowatts) output;

(C) Hand-held sanding equipment;

(D) Portable vacuum blasting equipment using steel shot and vented to a fabric filter;

(E) Shot peening operations, provided that no surface material is removed;

(F) Replacement of equipment that is used to control processes, such as temperature, air pressure, water pressure, electrical current, flow rate, etc.;

.....



# Capacity vs. PTE

CO						
Local Process Name	Rated Capacity (MMBtu/Hr)	Capacity (MMSCF/yr)	Units	Emission Factor	Units	Tons Emitted
External Combustion <100 MMBTU/hr	46	395.1	SCF/year	84.0	lb/MMSCF	16.6
		PTE (MMSCF/yr)				
External Combustion <100 MMBTU/hr	46	280.0	SCF/year	84.0	lb/MMSCF	11.8

$$46 \frac{\text{MMBtu}}{\text{hr}} \times \frac{1 \text{ MMCF}}{1,020 \text{ MMBtu}} \times \frac{8,760 \text{ hours}}{\text{year}} = 395.1 \frac{\text{MMSCF}}{\text{year}}$$

Throughput x Emission Factor x Conversion Factors = Emissions at Capacity/PTE

# Capacity with Enforceable Limits

- Example: Replace veneer dryer
- Facility is subject to NESHAP (90% control VOC) and 0.10 gr/dscf PM limits
- Type 3 NC due to PM emissions >SER

Throughput	Units	Pollutant	Capacity with Enforceable Limits			Capacity (no controls)		
			EF	Units	tons/yr	EF	Units	tons/yr
300,000	MSF/yr	PM/PM10/ PM2.5	0.1	gr/dscf	<b>112.63</b>	1.35	lb/MSF	<b>202.50</b>
		VOC	0.074	lb/MSF	<b>11.15</b>	0.743	lb/MSF	<b>111.45</b>

# Change Notice of Intent to Construct rules

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- Type 1 NC “notice & go” with optional 30 days for DEQ to approve de minimis equipment
- Clarify emissions calculation methodology
- Clarify emission thresholds apply to equipment, not entire source
- Clarify **no** increase in PSEL is allowed for Type 1 and 2 NCs
- Require all construction to commence within 18 months of approval

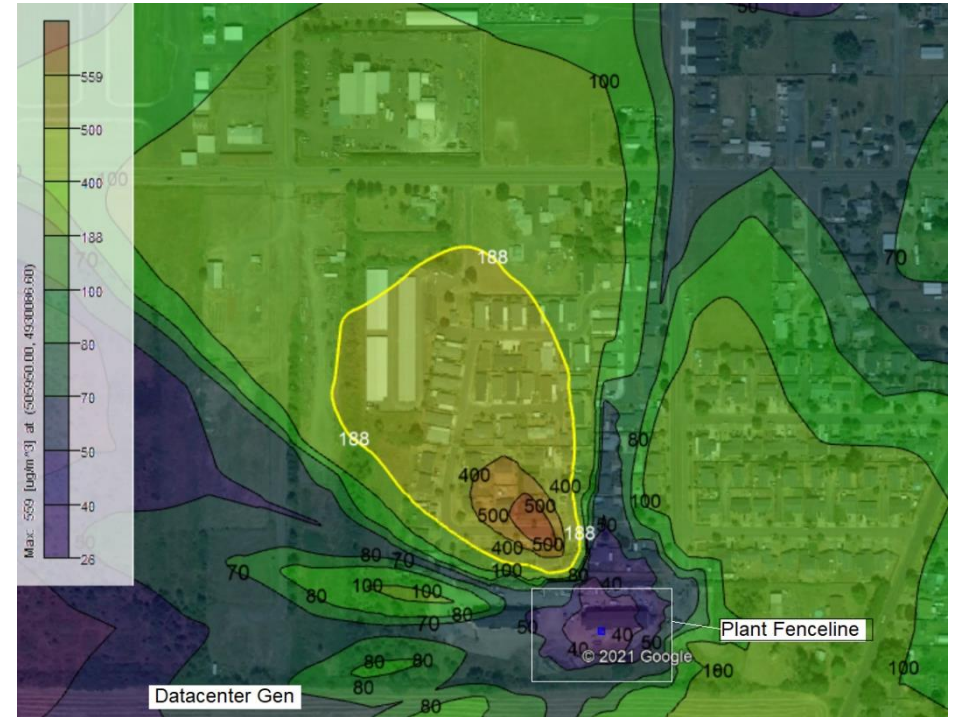
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# NC Modeling Rule Changes

# More air quality modeling

Require air quality modeling for smaller increases in emissions (**NEW** or **REPLACED** devices)

- Ensures the National Ambient Air Quality Standards are protected for new equipment
- Alerts DEQ that an existing source should be prioritized for short-term NAAQS analysis



# Modeling Tiers for NCs

## Tier 1

### Significant Emission Threshold (SET)

If below SET, no modeling required

- NO<sub>2</sub> = 3 pounds/hour
- SO<sub>2</sub> = 3 pounds/hour
- PM<sub>2.5</sub> = 5 pounds/day

## Tier 2

### Screening Modeling

If below NAAQS, no refined modeling required

- Use online tool
- Runs AERSCREEN
- Only for single EUs
- Include screening report in NC application

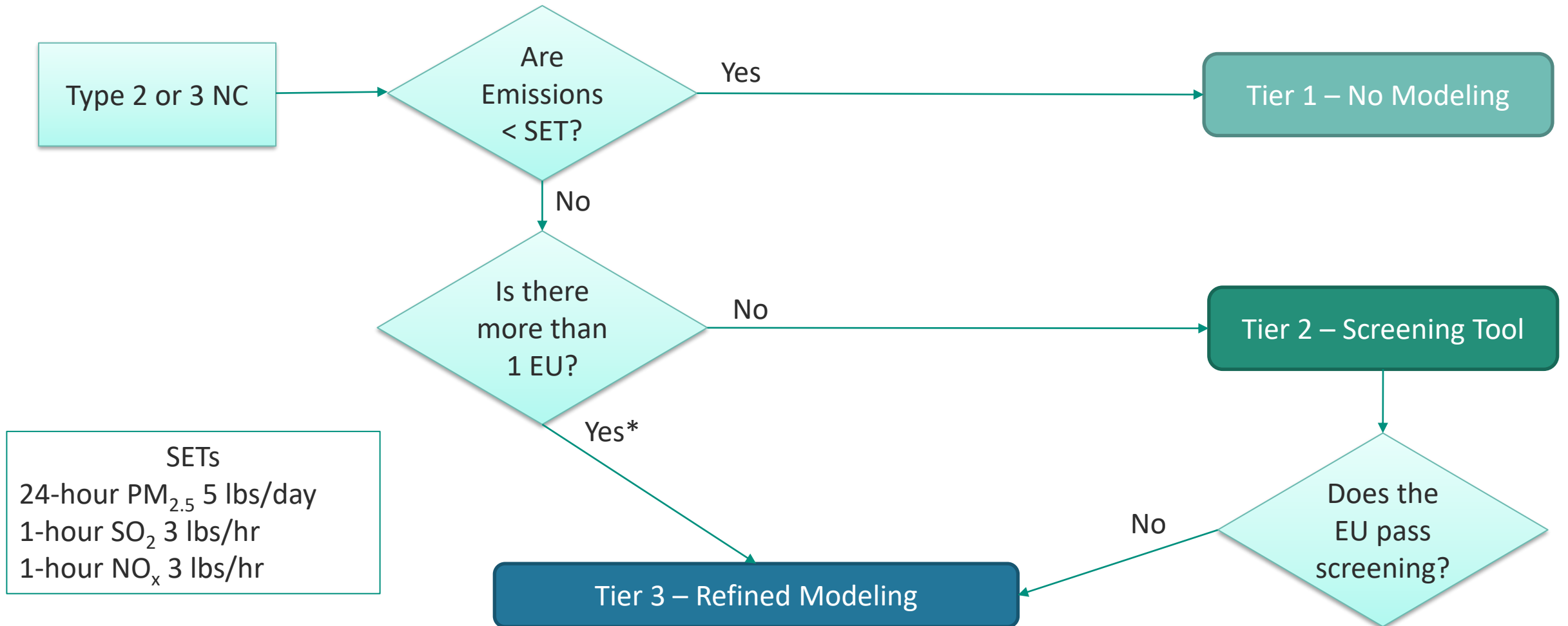
## Tier 3

### Refined Modeling

Requires modeling report and modeling files be reviewed

- If the EU fails the screening OR
- If multiple EUs are included
- AERMOD required
- Takes time to review

# Modeling Flow Chart



\*DEQ is developing guidance to find alternatives to refined modeling.

# Tier 1 - Significant Emissions Thresholds (SETs)

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- Apply to total hourly and daily emissions covered by the project in the NC
- Represent maximum hourly and daily emissions
- Type 2 NCs and Type 3 NCs (permit or permit mod) can take an emission limit to stay below SETs but it must be included in the approval



# Tier 2 – Screening Tool

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- Can only be used for a single EU
- Represent maximum hourly and daily emissions
- Limits are not required if the EU can comply with the NAAQS based on the Tier 2 Screening Tool
- Limits are required if the EU is not modeled at capacity
- EUs that cannot comply with NAAQS based on the Tier 2 Screening Tool must perform Tier 3 Refined Modeling

# Screening Tool

- Lat/Long gets closest background concentration
- Building Information for downwash calculations
- Maximum hourly/daily emissions or requested limit
- Stack information for single piece of equipment
- See results and compare to NAAQS
- Download summary report to include in NC application
- Download supporting documentation

Oregon DEQ Notice To Construct Screening Tool

**Facility Information**

Enter Facility Name  
Example Facility Name

Enter Permit Number (if applicable)  
00-0000

Enter Facility Address  
123 Example Street, A City, Portland, OR 97000

Input Latitude of Facility:  
42.12345

Input Longitude of Facility:  
-122.4563

**Building Information**

Building Height (m):  
10

Building Width (smaller side) (m):  
20

Building Width (larger side) (m):  
30

**Emissions Information**

NO2 Emission Rate (lbs/hr):  
15

SO2 Emission Rate (lbs/hr):  
2

PM2.5 Emission rate (lbs/day):  
10

**Equipment Information**

Enter Equipment Description  
Example Equipment

Input Stack Height (m):  
15

Input Stack Temperature (F):  
200

Input Stack Velocity (m/s):  
20

Input Stack Diameter (m):  
1

Distance to Fenceline (m):  
50

Run Screening

Please wait 5-10 seconds to run. Results should appear in a table below.

**Results**

Screening complete at: 2023-02-13 16:23:23

Pollutant	Modeled Conc.	Background	Total Impact	Above NAAQS
NO2	109.21	5.05	114.26	No
SO2	16.18	12.11	28.29	No
PM2.5	2.02	16.32	18.34	No

Generate Report   Download Documentation

# Tier 3 – Refined Modeling

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- Must have at least an approved protocol prior to submitting NC Application
- Modeling report should include modeling files
- Will take time to review
- May require enforceable conditions related to modeling

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# Toxic Air Contaminants NC Updates

# Toxic Air Contaminants = Regulated Pollutants

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- TAC reporting ***required***
- New reporting form (AQ104B) for TACs for NCs/Mods
  - Only TAC emissions related to NC/Mod
  - Facility-wide TAC emissions or unpermitted facilities
  - Electronic submittal to CAO via email
- Resources and guidance available
- In some cases, AQ104B Toxics reporting is not required
  - Like for like; controls; gas combustion exemption

# AQ104B Toxics Reporting

- AQ104B Toxics reporting.xlsx
  - TAC emissions information for new devices and activities
  - Based on the Air Toxics Emissions Inventory reporting form
  - Proposed annual and maximum daily emissions

Notice to Construct AQ104B Toxics Reporting - Version 1.0

Emissions Point Information				Activity Information			
Emissions Point Unit ID	Point/Fugitive	Unit Description	Pollution Prevention or Control Device[s]	Unit of Measure	Description/Type	Max Daily Activity [units/day]	Annual Activity [units/yr]
EU-1	Point	Widget Maker 1 (EXAMPLE)	Widget Waste RCO	tons	Input Material X	2	100
Blr1-NG	Point	Boiler 1 750 HP, 26 MMBtu/hr (EXAMPLE)	none	MMscf	Natural Gas	0.03	6
Blr1-D	Point	Boiler 1 750 HP, diesel backup	none	Mgal	Diesel	0.225	45
EU_ID	PointType	UnitDescription	ControlDevice	UnitOfMeasure	Description	DailyActivity	AnnualActivity
E-Gen	Point	Emergency generator, 100 HP Tier 2 diesel	none	Mgal	Diesel	0.15	3

# AQ104B Toxics reporting

Notice to Construct AQ104B Toxics Reporting - Version 1.0

Emissions Unit ID	Pollutant Information		Emission Factor Information				Calculated Maximum Daily Emissions [lb/day]	Calculated Annual Emissions [lb/yr]	
	CAS or DEQ ID	Pollutant Name	Controlled EF?	Control Efficiency	EF Values	Units			EF Reference/Notes
EU-1	61-82-5	Amitrole	N	97.50%	2.5	lb/ton	Manufacturer estimate	0.125	6.25
EU-1	7440-38-2	Arsenic and compounds	N	0.00%	0.1	lb/ton	The control efficiency does not apply to this pollutant	0.2	10
Blr1-NG	71-43-2	Benzene	N	0.00%	0.0058	lb/MMSCF	CAO NG Ext.Comb. (b)	0.000174	0.0348
Blr1-D	401	Polycyclic aromatic hydrocarbons (PAHs)	N	0.00%	0.0445	lb/Mgal	SCAQMD AB2588 B-2	0.0100125	2.0025
EU_ID	CAS	PollutantName	Control	ControlEfficiency	EFValue	Units	Notes	DailyEmissions	AnnualEmissions
E-Gen	71-43-2	Benzene	N	0.00%	0.0044	lb/M gal	SCAQMD AB2588 B-2	0.00066	0.0132
E-Gen	106-99-0	1,3-Butadiene	N	0.00%	0.0148	lb/M gal	SCAQMD AB2588 B-2	0.00222	0.0444
E-Gen	7440-43-9	Cadmium and compounds	N	0.00%	0.0015	lb/M gal	SCAQMD AB2588 B-2	0.000225	0.0045
E-Gen	50-00-0	Formaldehyde	N	0.00%	0.3506	lb/M gal	SCAQMD AB2588 B-2	0.05259	1.0518
E-Gen	18540-29-9	Chromium VI, chromate and dichromate particulate	N	0.00%	0.0001	lb/M gal	SCAQMD AB2588 B-2	0.000015	0.0003
E-Gen	7440-38-2	Arsenic and compounds	N	0.00%	0.0016	lb/M gal	SCAQMD AB2588 B-2	0.00024	0.0048
E-Gen	7439-92-1	Lead and compounds	N	0.00%	0.0083	lb/M gal	SCAQMD AB2588 B-2	0.001245	0.0249
E-Gen	365	Nickel compounds, insoluble	N	0.00%	0.0039	lb/M gal	SCAQMD AB2588 B-2	0.000585	0.0117
E-Gen	401	Polycyclic aromatic hydrocarbons (PAHs)	N	0.00%	0.0445	lb/M gal	SCAQMD AB2588 B-2	0.006675	0.1335
E-Gen	91-20-3	Naphthalene	N	0.00%	0.0053	lb/M gal	SCAQMD AB2588 B-2	0.000795	0.0159
E-Gen	75-07-0	Acetaldehyde	N	0.00%	0.3506	lb/M gal	SCAQMD AB2588 B-2	0.05259	1.0518
E-Gen	107-02-8	Acrolein	N	0.00%	0.3506	lb/M gal	SCAQMD AB2588 B-2	0.05259	1.0518
E-Gen	7664-41-7	Ammonia	N	0.00%	2.9	lb/M gal	SCAQMD AB2588 B-2	0.435	8.7
E-Gen	7440-50-8	Copper and compounds	N	0.00%	0.0041	lb/M gal	SCAQMD AB2588 B-2	0.000615	0.0123
E-Gen	100-41-4	Ethyl benzene	N	0.00%	0.0002	lb/M gal	SCAQMD AB2588 B-2	0.00003	0.0006
E-Gen	110-54-3	Hexane	N	0.00%	0.0035	lb/M gal	SCAQMD AB2588 B-2	0.000525	0.0105
E-Gen	7647-01-0	Hydrochloric acid	N	0.00%	0.1863	lb/M gal	SCAQMD AB2588 B-2	0.027945	0.5589
E-Gen	7439-96-5	Manganese and compounds	N	0.00%	0.0031	lb/M gal	SCAQMD AB2588 B-2	0.000465	0.0093
E-Gen	7439-97-6	Mercury and compounds	N	0.00%	0.002	lb/M gal	SCAQMD AB2588 B-2	0.0003	0.006
E-Gen	7782-49-2	Selenium and compounds	N	0.00%	0.0022	lb/M gal	SCAQMD AB2588 B-2	0.00033	0.0066
E-Gen	108-88-3	Toluene	N	0.00%	0.0044	lb/M gal	SCAQMD AB2588 B-2	0.00066	0.0132
E-Gen	1330-20-7	Xylene (mixture), including m-xylene, o-xylene	N	0.00%	0.0016	lb/M gal	SCAQMD AB2588 B-2	0.00024	0.0048

# CAO Status & Toxics Reporting

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## Case #1:

Existing source that ***has not*** completed CAO

- For Type 2 NCs & Type 3/4 Permit Mods
- AQ104B form required (except qualifying exemptions)
- CAO review **will not delay** NC approval
- In some cases, may require more information



# CAO Status & Toxics Reporting

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## Case #2:

- Unpermitted source – permit determination
  - AQ104B form required
  - Facility-wide emissions required
  - In some cases, may require more information or a Risk Assessment
  - CAO review can impact determinations

# CAO Status & Toxics Reporting

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## Case #3:

Source ***has*** completed CAO (new & existing)

- Process defined in CAO rules
- Formal re-evaluation of risk
- Determine if permit mod required

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# Excess Emissions Rule Changes

# Limit excess emissions

- Eliminate ability to operate without pollution control devices for 48 hours
- Mandatory shutdown except for these scenarios:
  - employee injury
  - equipment damage
  - emissions of shutdown/startup higher than continued operation



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# Less emissions during continued operation

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## **OAR 340-214-0330**

Emissions associated with shutdown and the subsequent startup will exceed those emissions resulting from continued operation.

- One field of 2-field electrostatic precipitator goes down
- Shutting down furnace during repair will result in a furnace cold start
- During shutdown and subsequent cold start, the ESP cannot safely operate so hours of completely uncontrolled emissions will occur
- If furnace kept operating with the one ESP field, significantly less emissions would result than if the furnace went through a shutdown and subsequent cold start.

# Request for continued operation

## **OAR 340-214-0330(3)**

An owner or operator may request continued operations under the conditions by submitting to DEQ a written request to continue operation along with the following information within 8 hours of the beginning of the period of excess emissions:

- (a) A description or plan of how the owner or operator will minimize the excess emissions to the greatest extent practicable;
- (b) A plan and timeline for returning the equipment or facility back to the applicable compliant emission limits as soon as possible; and either:
  - (A) Information verifying that reducing or ceasing operation could result in physical damage to the equipment or facility or injury to employees; or
  - (B) Calculations of emissions associated with shutdown and the subsequent startup and emissions resulting from continued operation.

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# Streamlining/Process Rule Changes

# Streamlining/process changes

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- Extend Simple permit terms from 5 to 10 years
- Require more complete permit renewal applications
- Expand the use of short-term activity permits for temporary operations in addition to unexpected and emergency activities



# Streamlining/process changes

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- Extend Simple permit terms from 5 to 10 years
- **Require more complete permit renewal applications**
- Expand the use of short-term activity permits for temporary operations in addition to unexpected and emergency activities

# More detail in **renewal** applications

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## **OAR 340-216-0040(2) and OAR 340-218-0040(4)**

- All information that has changed since the last permit renewal or issuance along with new applicable requirements
- A complete list of all emissions units, including air pollution control devices, and all categorically insignificant activities
- An estimate of the amount and type of each air contaminant in terms of hourly, daily, or monthly and yearly rates, with calculation procedures
- **When required by DEQ**, an air quality analysis demonstrating NAAQS compliance

# More detail in **new** permit applications

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## **OAR 340-216-0040(1)**

- Make, model, and identification name or number of each device, activity, and air pollution control device, if known
- Exhaust parameters (e.g., stack height, diameter, temperature, flowrate, volume or area source dimensions) of each emissions unit and air pollution control device
- Most recent Toxics Release Inventory report
- Anticipated date of the commencement and completion of construction

# Request for more information

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## **OAR 340-216-0040(10)**

- DEQ will provide written request for additional information by a certain date
- Some information can be submitted quickly (hours or days), other info takes time (not to exceed a 60-days)
- Applicant may submit a written request for extension 15 days prior to submittal deadline
- DEQ may grant an extension based on:
  - Applicant has demonstrated progress in completing the submittal; and
  - A delay is necessary, for good cause, related to obtaining more accurate or new data, performing additional analyses, or addressing changes in operations, any of which are likely to have a substantive impact on the outcomes of the submittal

# Streamlining/process changes

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- Extend Simple permit terms from 5 to 10 years
- Require more complete permit renewal applications
- Expand the use of short-term activity permits for temporary operations in addition to unexpected and emergency activities

# Short Term Activity ACDP

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## **OAR 340-216-0054**

DEQ may issue a 60-day Short Term Activity ACDP for:

- Activities that do not require a Title V permit under OAR chapter 340, division 218;
- Unexpected or emergency activities; or
- Operation of a pilot or an exploratory emissions unit.

Short term activity ACDP can be renewed for one 60-day period (no additional fees)

# Discussion/Q&A

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