Cleaner Air Oregon Exempt TEU Reporting

The Cleaner Air Oregon (CAO) rules in Division 245 were updated in November 2021, and these updates included revisions to the list of activities determined to be Categorically Exempt Toxics Emissions Units (CETEUs). The original list of CETEUs was established using the list of Categorically Insignificant Activities (CIAs) defined in OAR 340-200-0020(23), developed as part of Oregon's Title V permitting program. As part of these rule updates, DEQ revised the original list of CIAs to remove activities that may contribute to potential health risks from Toxic Air Contaminant (TAC) emissions; DEQ then migrated this revised list directly into the CAO rules to establish the current CETEUs in OAR 340-245-0060(3)(b). It is important to note that CETEUs represent activities that are principally supporting primary production activities at a source (e.g., maintenance and welding activities performed on process equipment) – primary production activities at a source may never be determined to be CETEUs.

Exempt Toxics Emissions Units

Exempt TEU: activities that DEQ determines do not emit Toxic Air Contaminants in amounts that materially contribute to source risk.

Categorically Exempt TEU: a list of activities, principally supporting primary production, that do not require further review by DEQ - see OAR 340-245-0060(3)(b) for the complete list.

What follows in this document is a list of those CIAs that were removed from the original list, along with thresholds DEQ has established for determining whether or not these activities may be designated as Exempt TEUs for the purposes of conducting a CAO risk assessment. DEQ is committed, through the CAO program, to determining the potential health risks to communities from TAC emissions, but also recognizes the need to only include those activities that materially contribute to potential health risks. Additionally, removal of an activity from the CETEU list does not mean that it can no longer be considered an Exempt TEU; rather, that a source must demonstrate to DEQ that the activity does not materially contribute to risk and should be determined to be an Exempt TEU for the purposes of conducting a risk assessment.

To assist sources, DEQ has developed reporting thresholds for annual material usage or emission rates from activities ***principally supporting the primary production activities at a facility***. These thresholds were developed using screening-level modeling assumptions coupled with conservative risk levels. The values provided are for individual material usage or emission rates, and in some cases, any material usage must be reported – see the following Appendices:

- Appendix A-1: Reporting Thresholds for Volatiles and Gases
- Appendix A-2: Reporting Thresholds for Semi-Volatiles
- Appendix A-3: Reporting Thresholds for Metals and Particulates
- Appendix B: Reporting Thresholds for Welding Activities
- Appendix C: Threshold Development Methodologies

If through the Emissions Inventory (EI) review process DEQ learns that a significant amount of TAC emissions are potentially being emitted from a number of these different activities, then DEQ may require emissions to be calculated from those activities before making a determination on their TEU status and inclusion in a risk assessment. In all cases (except for

CETEUs), sources must provide background information, documentation, and calculations to DEQ for review in making determinations on the Exempt status of a TEU.

If DEQ determines that some or all of TAC-emitting activities may be considered Exempt TEUs for the purposes of the CAO program, facilities must submit a list of these Exempt TEUs as part of their CAO EI submittal, but do not need to calculate emissions from them as part of the risk assessment process. [OAR 340-245-0040(4)(a)(A)] For those activities still considered CETEUs, DEQ has established the "Categorically Exempt Toxics Emissions Unit AQ523 Form," to satisfy these reporting requirements.

Categorically Insignificant Activities no Longer Categorically Exempt under CAO

I. Maintenance and repair shops & Automotive repair shops or storage garages
Many facilities have equipment or automotive maintenance and repair shops onsite that use materials that may contain TACs; however, usage of these materials may result in little to no TAC emissions, and in cases where TACs are emitted, these emissions may be insufficient to materially increase source risk. Please review the reporting thresholds in the provided appendices. If you have questions about activities and operations in a maintenance or automotive repair shop at your facility, please contact DEQ.

II. Air cooling or ventilating equipment not designed to remove air contaminants generated by or released from associated equipment
DEQ removed this activity in order to ensure that TAC emissions from air handling systems that may be inadvertently releasing fugitive TAC emissions are captured in a source's EI. In most cases sources will have properly identified emissions points in their submitted Process Flow Diagram (PFD) and this change should have negligible impact on their risk assessment.

III. Process raw water filtration systems
DEQ revised this activity to exempt only 'closed loop' filtration systems in order to include TAC emissions from these activities where appropriate. If you have filtration systems for process water that contain Volatile Organic Compounds (VOCs) please contact DEQ to determine reporting requirements.

IV. Pharmaceutical packaging
DEQ removed this activity to include reporting of TAC emissions from pharmaceutical packing operations, including but not limited to: printing; container sterilization; shipping box adhesives; etc.

V. Blueprint making
DEQ removed this activity as it nearly obsolete due to the advancement of computer printing technology – this should have no impact on any permitted sources in the CAO program.

VI. Routine maintenance, repair, and replacement such as anticipated activities most often associated with and performed during regularly scheduled equipment outages to maintain a plant and its equipment in good operating condition, including but not limited to steam cleaning, abrasive use, and woodworking
Many facilities perform routine maintenance operations on primary production equipment that incorporate the use of cleaning materials and/or special operating scenarios that may produce TAC emissions – e.g., cleaning paper machines with heated chemical solutions, or cleaning of

process furnaces. These types of activities should be reported in the EI. The removal of this CETEU was to ensure appropriate review of the regular maintenance and repair activities performed on primary production equipment or processes. Non-regular and emergency repair activities should not be included in the CAO process.

VII. Storage tanks, reservoirs, transfer and lubricating equipment used for ASTM grade distillate or residual fuels, lubricants, and hydraulic fluids & On-site storage tanks not subject to any New Source Performance Standard (NSPS), including underground storage tanks (UST), storing gasoline or diesel used exclusively for fueling of the facility's fleet vehicles

DEQ has developed the following reporting thresholds for including TAC emissions from these TEUs:

1. Report TAC emissions from Underground Storage Tanks storing gasoline if the maximum annual throughput for your facility is >23,000 gallons per year.
2. Report TAC emissions from Above-ground Storage Tanks storing gasoline if the maximum annual throughput for your facility is >8,000 gallons per year.
3. TAC emissions from tanks storing diesel at ambient temperature and pressure do not need to be reported.
4. TAC emissions from tanks storing semi-volatile materials (e.g., lubricants and oils) at ambient temperature and pressure may not need to be reported.

Please consult DEQ if you have tanks storing VOC TACs other than gasoline. Regardless of whether these thresholds are exceeded, please provide the number of tanks, tank capacities, and material throughputs for your facility for DEQ to review.

VIII. Natural gas, propane, and liquefied petroleum gas (LPG) storage tanks and transfer equipment

DEQ removed these activities as fugitive TAC emissions from tanks and service equipment for these fluids can be significant emissions at some facilities with extensive use of these fuels. In most cases sources will not need to report emissions from these activities, please confirm with DEQ.

IX. Pressurized tanks containing gaseous compounds

DEQ removed these activities in order to ensure that pressurized tanks containing TACs that may require periodic releases of gases in order to maintain working pressures – e.g., gas cylinders containing highly toxic compounds like chlorine or arsine gas. Report these activities in the EI.

X. Fire suppression and training

These activities were removed as they were deemed redundant with 'Fire brigade training.' There should be no effect on a risk assessment from this change.

XI. Diesel combustion Emergency Generators

DEQ revised the emergency generator CETEU to require reporting of all diesel combustion TAC emissions from emergency generators at a source, regardless of the total horsepower from these units on-site. In accordance with federal regulations, sources may report up to 100 hours per generator per year as the maximum non-emergency operations allowed under the CAO program for the purposes of performing a risk assessment. DEQ has provided recommendations on reporting TAC emissions from diesel combustion emissions in the FAQs. Emergency generators not combusting diesel may still be considered CETEUs.

XII. Industrial cooling towers that do not use chromium-based water treatment chemicals
DEQ removed these activities as fugitive emissions from mist from these TEUs is common and in some cases, the water may contain anti-corrosion or antimicrobial compounds that contain reportable TACs.

XIII. Uncontrolled oil/water separators
DEQ removed these to include reporting of VOCs from oil/water separators in the EI – consult with DEQ on how best to include TAC emissions from this activity.

XIV. Combustion source flame safety purging on startup
This activity was removed as some sources have the potential to emit TAC emissions during these activities, as the flare serves as a control during startup. Please consult with DEQ on how best to include TAC emissions from this activity.

XV. Broke beaters, pulp and repulping tanks, stock chests and pulp handling equipment & stock cleaning and pressurized pulp washing & White water storage tanks
These activities were removed as the pulping process in the Kraft method requires the significant use of chemicals with VOC TACs. There are established emission factors for VOC TAC emissions from these types of activities (e.g., methanol), and they should be reported in the EI.

Appendix A-1: Reporting Thresholds for Volatiles and Gases

When comparing material usages at your facility with the thresholds listed below, assume complete volatilization at ambient conditions. These rates may also be used as thresholds for emissions from activities generating volatile emissions of the chemicals listed below – e.g., benzene evaporated from wastewater treatment. If the usages/emissions exceed their corresponding thresholds, these activities may not be considered Exempt Toxics Emissions Units (TEUs) under the Cleaner Air Oregon (CAO) program, and emissions from these activities will need to be included in your CAO Emissions Inventory.

Note, these thresholds are not intended to apply to CAO emissions reporting requirements related to primary production activities at your facility.

Report Annual Usage > 1,000 pounds per year

1,1,1,2-Tetrafluoroethane	811-97-2
1,1,1-Trichloroethane (Methyl chloroform)	71-55-6
1,1-Difluoroethane	75-37-6
1-Chloro-1,1-difluoroethane	75-68-3
2-Butanone (Methyl ethyl ketone)	78-93-3
Acetone	67-64-1
Ammonia	7664-41-7
Carbon disulfide	75-15-0
Chlorodifluoromethane (Freon 22)	75-45-6
Chloroethane (Ethyl chloride)	75-00-3
Chloroform	67-66-3
Cresols (mixture), including:	1319-77-3
m-Cresol	108-39-4
o-Cresol	95-48-7
p-Cresol	106-44-5
Cyclohexane	110-82-7
Dichloromethane (Methylene chloride)	75-09-2
Ethylene glycol	107-21-1
Hexane	110-54-3
Isophorone	78-59-1
Isopropyl alcohol	67-63-0
Isopropylbenzene (Cumene)	98-82-8
Methanol	67-56-1
Methyl isobutyl ketone (MIBK, Hexone)	108-10-1
Methyl methacrylate	80-62-6
Phenol	108-95-2
Propylene	115-07-1
Propylene glycol monomethyl ether	107-98-2
sec-Butyl alcohol	78-92-2
Styrene	100-42-5
Toluene	108-88-3
Triethylamine	121-44-8
Vinyl acetate	108-05-4
Vinylidene chloride	75-35-4
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7

Report Annual Usage > 500 pounds per year

1,2,3-Trimethylbenzene	526-73-8
1,2,4-Trimethylbenzene	95-63-6
1,3,5-Trimethylbenzene	108-67-8
Acetonitrile	75-05-8
Chlorobenzene	108-90-7
Chloromethane (Methyl chloride)	74-87-3
Dimethyl formamide	68-12-2
Ethylene glycol monobutyl ether	111-76-2
Ethylene glycol monoethyl ether	110-80-5
Ethylene glycol monoethyl ether acetate	111-15-9
Ethylene glycol monomethyl ether	109-86-4

Report Annual Usage > 100 pounds per year

1,2-Epoxybutane	106-88-7
2-Nitropropane	79-46-9
Carbonyl sulfide	463-58-1
Hexachloroethane	67-72-1
Hydrochloric acid	7647-01-0
Methyl tert-butyl ether	1634-04-4
Phosphoric acid	7664-38-2
Tetrachloroethene (Perchloroethylene)	127-18-4

Report Annual Usage > 10 pounds per year

1,1-Dichloroethane (Ethylidene dichloride)	75-34-3
1,2-Dichloropropane (Propylene dichloride)	78-87-5
1,3-Dichloropropene	542-75-6
1,4-Dioxane	123-91-1
1-Bromopropane (n-propyl bromide)	106-94-5
4-Chloro-o-phenylenediamine	95-83-0
Acetaldehyde	75-07-0
Acrylic acid	79-10-7
Aniline	62-53-3
Bromoform	75-25-2
Bromomethane (Methyl bromide)	74-83-9
Ethyl acrylate	140-88-5
Ethyl benzene	100-41-4
Ethylene glycol monomethyl ether acetate	110-49-6
Fluorides	239
Hydrogen fluoride	7664-39-3
Hydrogen sulfide	7783-06-4
Methyl isocyanate	624-83-9
N-Nitrosodiphenylamine	86-30-6
Pentachlorophenol	87-86-5
Propionaldehyde	123-38-6
Propylene oxide	75-56-9
Sulfur trioxide	7446-11-9
Sulfuric acid	7664-93-9
Trichloroethene (TCE, Trichloroethylene)	79-01-6
Vinyl bromide	593-60-2

Report Any Annual Usage

1,1,1,2-Tetrachloroethane	630-20-6
1,1,2,2-Tetrachloroethane	79-34-5
1,1,2-Trichloroethane (Vinyl trichloride)	79-00-5
1,2,3-Trichloropropane	96-18-4
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8
1,2-Diphenylhydrazine (Hydrazobenzene)	122-66-7
1,3-Butadiene	106-99-0
1,3-Propane sultone	1120-71-4
2,4,6-Trichlorophenol	88-06-2
2,4-Diaminoanisole	615-05-4
2,4-Diaminotoluene (2,4-Toluene diamine)	95-80-7
2,4-Dinitrotoluene	121-14-2
2-Aminoanthraquinone	117-79-3
2-Chloroacetophenone	532-27-4
3,3'-Dichlorobenzidine	91-94-1
4-Dimethylaminoazobenzene	60-11-7
Acetamide	60-35-5
Acrolein	107-02-8
Acrylamide	79-06-1
Acrylonitrile	107-13-1
Aldrin	309-00-2
Allyl chloride	107-05-1
Aramite	140-57-8
Arsine	7784-42-1
Benzene	71-43-2
Benzyl chloride	100-44-7
Bis(2-chloroethyl) ether (DCEE)	111-44-4
Bis(chloromethyl) ether	542-88-1
Carbon tetrachloride	56-23-5
Chlordane	57-74-9
Chlorine	7782-50-5
Chlorine dioxide	10049-04-4
Chloropicrin	76-06-2
Chloroprene	126-99-8
Cupferron	135-20-6
Cyanide, Hydrogen	74-90-8
Dichlorovos (DDVP)	62-73-7
Diethylene glycol monobutyl ether	112-34-5
Diethylene glycol monoethyl ether	111-90-0
Epichlorohydrin	106-89-8
Ethylene dibromide (EDB, 1,2-Dibromoethane)	106-93-4
Ethylene dichloride (EDC, 1,2-Dichloroethane)	107-06-2
Ethylene oxide	75-21-8
Formaldehyde	50-00-0
Glutaraldehyde	111-30-8
Hexachlorobutadiene	87-68-3
Hexachlorocyclopentadiene	77-47-4
Hexamethylene-1,6-diisocyanate	822-06-0
Hydrazine	302-01-2
Maleic anhydride	108-31-6
Methylene diphenyl diisocyanate (MDI)	101-68-8

Naphthalene	91-20-3
Nitrobenzene	98-95-3
N-Nitrosodiethylamine	55-18-5
N-Nitrosodimethylamine	62-75-9
N-Nitrosodi-n-butylamine	924-16-3
N-Nitrosodi-n-propylamine	621-64-7
N-Nitrosomethylethylamine	10595-95-6
N-Nitrosomorpholine	59-89-2
N-Nitrosopiperidine	100-75-4
N-Nitrosopyrrolidine	930-55-2
p-Chloro-o-toluidine	95-69-2
p-Cresidine	120-71-8
p-Dichlorobenzene (1,4-Dichlorobenzene)	106-46-7
Phosgene	75-44-5
Phosphine	7803-51-2
Propylene glycol dinitrate	6423-43-4
Thioacetamide	62-55-5
Titanium tetrachloride	7550-45-0
Toluene diisocyanates (2,4- and 2,6-)	26471-62-5
Toluene-2,4-diisocyanate	584-84-9
Toluene-2,6-diisocyanate	91-08-7
Toxaphene (Polychlorinated camphenes)	8001-35-2
Urethane (Ethyl carbamate)	51-79-6
Vinyl chloride	75-01-4

Appendix A-2: Reporting Thresholds for Semi-Volatiles

Activities that include usage or emissions of the chemicals listed below, and which aerosolize or volatilize these chemicals during operations, should be compared against their thresholds below; examples include spray applications (e.g., coatings) or operations occurring at elevated temperatures or under vacuum.

Note, these thresholds are not intended to apply to CAO emissions reporting requirements related to primary production activities at your facility.

Report Annual Usage > 5 pounds per year	
Caprolactam	105-60-2
Phthalic anhydride	85-44-9
p-Nitrosodiphenylamine	156-10-5

Report Any Annual Usage	
4,4'-DDD (4,4'-dichlorodiphenyldichloroethane)	72-54-8
4,4'-DDE (4,4'-dichlorodiphenyldichloroethene)	72-55-9
4,4'-Methylene bis(2-chloroaniline) (MOCA)	101-14-4
4,4'-Methylenedianiline (and its dichloride)	101-77-9
Azobenzene	103-33-3
Benzidine (and its salts)	92-87-5
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7
Chlorinated paraffins	108171-26-2
DDT	50-29-3
Dieldrin	60-57-1
Diethanolamine	111-42-2
Direct Black 38	1937-37-7
Direct Blue 6	2602-46-2
Direct Brown 95 (technical grade)	16071-86-6
Ethylene thiourea	96-45-7
Heptachlor	76-44-8
Heptachlor epoxide	1024-57-3
Hexachlorobenzene	118-74-1
Hexachlorocyclohexane, alpha-	319-84-6
Hexachlorocyclohexane, beta-	319-85-7
Hexachlorocyclohexane, gamma- (Lindane)	58-89-9
Hexachlorocyclohexanes (mixture)	608-73-1
Michler's ketone	90-94-8
Potassium bromate	7758-01-2
Polychlorinated biphenyls (PCBs)	See note below.
Polychlorinated dibenzo-p-dioxins (PCDDs) & dibenzofurans (PCDFs)	See note below.
Polycyclic aromatic hydrocarbons (PAHs) & Polycyclic aromatic hydrocarbon derivatives [PAH-Derivatives]	See note below.

Note: These chemicals are typically emitted as byproducts of incomplete combustion and in most cases are not present as components of materials used in maintenance or repair shops. Please refer to OAR 340-247-8010 Table 1 for a complete reporting list for these chemicals.

Appendix A-3: Reporting Thresholds for Metals and Particulates

Note, these thresholds are only to be used with material usage or emissions from activities *supporting* the primary production processes at your facility (e.g., used in maintenance and repair shops) – these thresholds are not intended to apply to CAO emissions reporting requirements related to primary production activities at your facility.

Report Annual Usage > 20 pounds per year	
Aluminum and compounds	7429-90-5
Phosphorus, white	12185-10-3
Silica, crystalline (respirable)	7631-86-9
Report Any Annual Usage	
Antimony and compounds	7440-36-0
Antimony trioxide	1309-64-4
Arsenic and compounds	7440-38-2
Asbestos	1332-21-4
Beryllium and compounds	7440-41-7
Cadmium and compounds	7440-43-9
Chromium VI, chromate and dichromate particulate, including but limited to the following Chromium (VI)-containing compounds:	18540-29-9
Azo dyes containing chromate or dichromate – e.g., C.I. solvent orange 54	Multiple
Barium chromate	10294-40-3
Calcium chromate	13765-19-0
Chromium trioxide	1333-82-0
Chromium zinc oxide	50922-29-7
Lead chromate	7758-97-6
Lead chromate oxide	11119-70-3
Pentazinc chromate octahydrate	49663-84-5
Sodium dichromate	10588-01-9
Strontium chromate	7789-06-2
Chromium VI, chromic acid aerosol mist	18540-29-9
Cobalt and compounds	7440-48-4
Lead and compounds	7439-92-1
Manganese and compounds	7439-96-5
Mercury and compounds	7439-97-6
Nickel compounds, insoluble, including:	365
Nickel carbonyl	13463-39-3
Nickel metal	7440-02-0
Nickel oxide	1313-99-1
Nickel subsulfide	12035-72-2
Nickel sulfide	11113-75-0
Nickel compounds, soluble, including:	368
Nickel acetate	373-02-4
Nickel carbonate	3333-67-3
Nickel carbonate hydroxide	12607-70-4
Nickel chloride	7718-54-9
Nickel hydroxide	12054-48-7
Nickel nitrate hexahydrate	13478-00-7
Nickel sulfate	7786-81-4

Nickel sulfate hexahydrate	10101-97-0
Nickelocene	1271-28-9
Refractory Ceramic Fibers	572
Vanadium (fume or dust)	7440-62-2
Vanadium pentoxide	1314-62-1

Appendix B: Reporting Thresholds for Welding Activities

If thresholds for the welding processes and electrodes used at your facility are not provided within this Appendix, please provide background information and calculations sufficient to proceed with an exemption determination.

Note, these thresholds are not intended to apply to CAO emissions reporting requirements related to primary production activities at your facility.

Report Annual Usage > 500 pounds per year

Welding Type	Electrode Type (last 2 digits of SCC)	
FCAW	E70T	(-54)
	E71T	(-55)
GMAW	E70S	(-54)
SAW	EM12K	(-10)
SMAW	E6010	(-28)
	E6011	(-32)
	E6012	(-36)
	E6013	(-40)
	E7024	(-48)

Report Annual Usage > 50 pounds per year

Welding Type	Electrode Type (last 2 digits of SCC)	
FCAW	E110	(-06)
GMAW	E308	(-12)
	ER316	(-20)
	ERNiCrMo	(-76)
	ERNiCu	(-80)
SMAW	E7018	(-44)
	E7028	(-52)
	E8018	(-56)
	ENi-Cl	(-72)
	ENi-Cu	(-80)

Report Any Annual Usage

Welding Type	Electrode Type (last 2 digits of SCC)	
FCAW	E11018	(-08)
	E308	(-12)
	E316	(-20)
SMAW	14Mn-4Cr	(-04)
	E11018	(-08)
	E308	(-12)
	E310	(-16)
	E316	(-20)
	E410	(-24)
	E9015	(-60)
	E9018	(-64)
	ECoCr	(-68)
	ENiCrMo	(-76)

Notes:

- Reference sources – AP-42 CH. 12-19, Tables 1&2, and San Diego Air Pollution Control District 'Welding Operations' reporting guidance
- SCC = Source Classification Code; FCAW = Flux Core Arc Welding; GMAW = Gas Metal Arc Welding; SAW = Submerged Arc Welding; and SMAW = Shielded Metal Arc Welding.

Appendix C: Threshold Development Methodologies

DEQ used the following screening-level modeling assumptions to develop the thresholds in these appendices:

- Emission Type: Fugitive
- Dispersion Factor: 0.0045 [micro grams/meter^3/pounds/year] (Building Area: ≤ 3,000 feet^2; Building Height: ≤ 20 feet; Exposure location distance: 50 meters)
- Risk Based Concentration: Residential Exposure Cancer and Noncancer Chronic were used - if a Toxic Air Contaminant has both of these values, the more restrictive of the two was used. [OAR 340-245-8010 Table 2]
- Target Risk: In order to back-calculate thresholds, DEQ chose the following target risks, based on half of the New Source Aggregate Toxics Emissions Unit levels:
    - Cancer: 0.25 Excess Cancer Risk
    - Noncancer chronic: 0.05 Hazard Index
- General Engineering Assumptions:
    - Volatile and Semi-volatile chemicals: Assumed that all chemicals used emitted at 100%, and no controls.
    - Metal Particulate Matter: Assumed no transfer efficiency for spray-applied materials, or particulate controls.
    - Submerged Arc Welding: Assumed all this type of welding had a Particulate Matter emission factor of 0.05 pounds per 1,000 pounds of electrode used, as this was the only available emission factor in AP-42 CH. 12-19, Tables 1&2.
- Tank Calculation Assumptions: For a complete listing of all background calculation materials please contact cleanerair@deq.oregon.gov.