



Guide to Government Records for Portland Area Industrial Air Polluters

One example is you have to use an algorithm to calculate unfiltered emissions:

1. If column "Control Device Type" is zero or nothing and then also
2. "Overall Control Efficiency (% decimal)" is 0 or nothing

Then no control device is used for that industrial process and the entire row is removed to calculate unfiltered emissions.

Data included in Portland Clean Air web map at portlandcleanair.org

DEQ Cleaner Air Oregon (CAO) Emissions Inventories

The best information available from any government agency on Portland stack emitters is the Department of Environmental Quality (DEQ) Cleaner Air Oregon (CAO) Emissions Inventories and Level I Screening. These are spreadsheets of chemical emissions data for every Oregon industry with a DEQ Title V, Standard and Simple Air Contaminant Discharge Permit (ACDP) - the largest Oregon industries with chemical emissions. Cleaner Air Oregon is still working on data for the two smaller ACDP emitters: General and Basic ACDP. The Emissions Inventories tell us nothing about unpermitted stack emitters of which there are many in the Portland area. So different, less revealing records are required to understand the smaller industrial polluters.

Also, due to the unusual format, adding the total amount of emissions per industry or even per chemical is extremely challenging. Thankfully two professional computer programmers volunteered with Portland Clean Air and created an easy to use format for this data that solves these problems. Now the easiest way to access DEQ CAO Emissions Inventory data is the web map at the top of portlandcleanair.org. Only the industries that are depicted by red, purple and blue teardrops have this data included. Simply click on one of these teardrops and a sidebar will appear on the left of the map. Then click on the link under "more info URL" and a new tab will appear to report the data for that industry.

Air Contaminant Discharge Permits

Title V permit		most air pollution
Standard Permit		
Simple Permit		
General Permit		
Basic Permit		
* no permit		

* Note that some industries without a permit pollute more than some permitted industries.

For large stack emitters the Emissions Inventories report all chemicals used by the industry including chemical name and weight emitted into the air. One problem with the Emissions Inventories is the spreadsheets are excessively complicated to read.

DEQ CAO Emissions Inventory data will near the top, under "Permits," under the heading "2016 DEQ Chemical Balance Sheets." That lists each chemical emitted, total emissions, and subtotals for both filtered and unfiltered emissions. "Unfiltered emissions" go right into the air without any pollution control device. Control devices, such as thermal oxidizers and bag houses etc., generally remove 97-99% of industrial stack emissions before the pollution goes airborne. Totals for filtered emissions are named "other emissions." These are emissions where a control device is used on the industrial process but the filter either failed to catch all the emissions or the pollution partially avoided the control device and got into the air.

We noticed that a few industries with Title V Standard or Simple ACDPs should but don't have

DEQ CAO emissions inventories in the PCA web map. These include Precision Cast Parts - where this information is not included at all, and Arclin - which appears to be included incorrectly. Our work was checked by the DEQ and they found it to be correctly done. We are working now to fix these few anomalies. American Petroleum Environmental Services doesn't have Emission Inventory data because didn't submit theirs to DEQ, apparently the only Portland industry that failed to do so.

Another way to access DEQ CAO Emissions Inventories is using the Portland Clean Air report which ranks these industries. This is found under the link "Portland Clean Air Reports" on the front page of our website. It is the first link under "Reports" the report is called *Portland Clean Air Ranked Stack Emitters and Diesel Particulate Levels*. This report is data from the DEQ Level I Screening of Emissions Inventories. DEQ calculated cancer and non cancer risk for each chemical emitted to the air. They used this to assign a score we used to assign the ranking. In order to read the total cancer and non cancer risk per industry, expressed in expected cancer and non cancer cases per million people, you would need the DEQ's database of these calculations. We have officially requested this and are expecting it soon.

Another way to access DEQ CAO Emissions Inventory data is with a spreadsheet Portland Clean Air compiled. This can be found on the link on our front page of our website "Portland Clean Air Data." It is the first group of links under "DEQ" under "Cleaner Air Oregon Chemical Balance Sheets Compiled by Portland Clean Air."

The solution to unfiltered emissions is to install a control device such as a baghouse or thermal oxidizer which remove 97-99% of chemical emissions. High levels of filtered emissions can often be removed by installing devices that better route the emissions into the existing control device.

DEQ Level I Screening of Emissions Inventories.

This spreadsheet can be downloaded by clicking "Link to prioritization risk values" in the data section of portlandcleanair.org or at this link:

portlandcleanair.org/files/portland_clean_air/deq_emissions/output_data/Prioritization%20Risk%20Values.xlsx

This spreadsheet lists the total amount of each chemical emitted for each Industry with a Title V, Standard, or Simple ACDP. DEQ then provided a cancer and non cancer risk factor using a hierarchy of federal and state studies. Portland Clean Air agrees with the DEQ's decision on which risk factor studies they used.

To use this dataset for an industry, copy and paste all lines for a specific industry and then copy and paste the column headers at the top. Sort this new industry specific spreadsheet by "TotalRiskRankingFactor" from largest to smallest. Chemical emissions at the top are the most dangerous to human health. Industries often have a just few chemicals of the dozens emitted driving most of the risk. This risk is further delineated into cancer and non-cancer risk.

These risk values often use lower average stack heights and population proximities than reality to calculate risk. When the actual stack height and distance to residents is used in future health assessments these risk values will change, to a lower, more accurate measure of risk.



DEQ Permits and Reviews

Before Cleaner Air Oregon data was available, DEQ ACDP and ACDP Reviews were the only source of data for certain industries. However now the Emissions Inventories are far better for Title V, Standard and Simple ACDPs. The most useful thing about the Permits now is they begin with an explanation of what the industry does in detail. Unlike Title V Standard and Simple ACDPs, General and Basic ACDPs are not written for each specific individual industry. However, these general statements on expected emissions of each industry type are useful starting point for smaller polluters. For example if you look at a General ACDP for a rock crusher, they will list the general expected emissions of all Oregon rock crushers.



Explanation of Contents for Data Page at portlandcleanair.org

Portland Clean Air is still the only source to read DEQ Permits and Reviews except for Title V Permits and Reviews available through the DEQ website. Portland Clean Air scanned in 5,000 pages of these in the DEQ office after initially being refused access in the form of excessive fees. Now these public records are easily available through the web map at the top of portlandcleanair.org – click on an industry with a DEQ Permit and a sidebar appears. Then click the link in the sidebar. DEQ Permits and reviews will be links at the top of the page.

Oregon State Fire Marshall HSIS

The Oregon State Fire Marshall's Hazardous Substance Information System (HSIS) is onsite chemical storage data for each industry. We have removed non hazardous materials and North American Industrial Classification System (NAICS) with codes starting with "4." These are chemicals stored or warehoused for retail. Because they are not used onsite there is no pollution from them.

Some industries have no permit but store chemicals that are marked by NAICS codes for onsite industrial use – so they are air polluters but have no ACDP. These are depicted as red dots on the Portland Clean Air web map. Because no agency is tracking their emissions you can only infer what they are emitting based on chemical storage data.

Another class of industry that emits toxic chemicals but generally has no permit is auto body painters. These are depicted as small purple dots on the Portland Clean Air web map. PCA obtained this data by using an app that creates a spreadsheet from Yelp listings.

Rail yards and airports are some of the largest polluters in Portland and are depicted on the Portland Clean Air web map using black train and airplane symbols. Data on their emissions comes from the EPA National Emissions Inventory (NEI).

The Portland Clean Air Data Pages under "Portland Clean Air Data" contain all of the data we've acquired from eight agencies:

EPA

First under "EPA" is the Environmental Protection Agency's Toxic Release Inventory (TRI) data. This annual data set was once the most detailed data available for large stack emitters but is now obsolete due to the DEQ CAO Emissions Inventories. EPA TRI has many loopholes that stop complete reporting. Also the data for EPA National Air Toxics Assessment (NATA) which is the best modeling data for diesel particulate by census tracks. This is the basis for Portland Clean Air's modeling of diesel particulate in our report *Portland Clean Air ranked stack emitters and diesel particulate levels* which is made more accurate by including Oregon Department of Transportation (ODOT) 24 hour truck counts. EPA National Emissions Inventory (NEI) reports which diesel vehicle type is most responsible for Portland airborne diesel particulate. The answer: it's mostly cause by industrial short haul trucks.

Finally, EPA NEI is the only source of airport and rail yard emissions, among the worst in Portland. A new spreadsheet recently obtained from EPA NEI is all 2014 lead emissions data for airborne US industrial sources. This will be uploaded to the data section soon, for now contact greg@portlandcleanair.org for a copy.

DEQ

Oregon Department of Environmental Quality (DEQ) data other than the CAO and ACDP data previously described includes aethalometer readings data. This is four sites where a \$30,000 aethalometer took diesel particulate readings. This is a device that sucks air through filter paper and measures the color change, largely caused by diesel particulate and wood smoke.

Oregon State Fire Marshal HSIS

This has been previously described in this document. However we also created excerpts of the data for onsite heavy metals and VOCs. These are also included.

Multnomah County Health Department Multnomah County Building Department

The Multnomah County Health Department for restaurants and food carts is included. this was partly the basis for our report *Portland Residential and Restaurant Wood Smoke* found in our "Reports" section. The data is also mapped there. Also included is Multnomah County restaurants with Type I hoods. These are the restaurants that emit the most air pollution among restaurants. that data accurately came from the Multnomah County Building Department, we'll have to fix that .

ODOT

The Oregon Department of Transportation (ODOT) data on Oregon commercial diesel truck ownership over 26,000 lbs. This is partly the basis for our *Commercial Diesel Trucks – Who Is Causing Portland's Diesel Particulate Problem?*. Also the ODOT 24 truck count data is included.

DMV

Department of Motor Vehicles (DMV) records for government diesel trucks, commercial diesel trucks under 26,000 lbs, and personally owned diesel trucks are included with a key called flag codes. This is partly the basis for our *Commercial Diesel Trucks – Who Is Causing Portland's Diesel Particulate Problem?*.

PBOT

Portland Bureau of Transportation (PBOT) have 24 hour truck count data that are generally harder to use than ODOT data. Both ODOT and PBOT do surface street 24 hour truck counts. ODOTs are better because they are geocoded. With the PBOT data we have to recreate a location a half block from the test site at an intersection. It's interesting that ODOT and PBOT come up with greatly different 24 hour truck count numbers for the same area. For example at the Brooklyn Rail Yards.

Portland Park and Rec

Portland Park and Recreation data on herbicide use in Portland parks is included. This data is mapped but Portland Clean Air is working on a report with the cost of alternatives to ban these chemicals as Paris, France has done.

For the past five years Portland Clean Air has filed information requests to successfully obtain data from the nine agencies that regulate Oregon industrial air pollution. We use statistics software, GIS mapping, Google mapping, computer programming, and web design to make this data understandable to everyone.