air contaminant discharge permit

review report

Department of Environmental Quality

**Source Information:**

|  |  |
| --- | --- |
| SIC |  |
| NAICS |  |

|  |  |
| --- | --- |
| Source Categories (Table 1 Part, code) |  |
| Public Notice Category |  |

**Compliance and Emissions Monitoring Requirements:**

|  |  |
| --- | --- |
| FCE |  |
| Compliance schedule |  |
| Unassigned emissions |  |
| Emission credits |  |
| Special Conditions |  |

|  |  |
| --- | --- |
| Source test [date(s)] |  |
| COMS |  |
| CEMS |  |
| PEMS |  |
| Ambient monitoring |  |

**Reporting Requirements**

|  |  |
| --- | --- |
| Annual report (due date) |  |
| Quarterly report (due dates) |  |

|  |  |
| --- | --- |
| Monthly report (due dates) |  |
| Excess emissions report |  |
| Other (specify) |  |

**Air Programs**

|  |  |
| --- | --- |
| Synthetic Minor (SM) |  |
| SM -80 |  |
| NSPS (list subparts) |  |
| NESHAP (list subparts) |  |
| Part 68 Risk Management |  |
| CFC |  |
| NSR |  |
| PSD |  |
| RACT |  |
| TACT |  |
| Other (specify) |  |

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PERMITTING

PERMITTEE IDENTIFICATION

# [Provide name and location of the permitted source.]

PERMITTING ACTION

# The proposed permit is a new permit for a <new or existing> source.

**<OR>**

# The proposed permit is a renewal of an existing Air Contaminant Discharge Permit (ACDP) that was issued on <enter date> and was originally scheduled to expire on <enter date>. The existing ACDP remains in effect until the proposed permit is issued because the permittee submitted a timely and complete application for renewal.

OTHER PERMITS

# No other permits have been issued or are required by the DEQ for this source.

**<OR>**

# Other permits issued or required by the DEQ for this source include:

ATTAINMENT STATUS

# The source is located in an attainment area for <list pollutants>, a maintenance area for <list pollutants>, and a nonattainment area for <list pollutants>.

# The source <is/is not> located within 10 kilometers of the <list the Class I area> Class I Air Quality Protection Area but the emissions are less than the significant emissions rate.

source description

overview

# The permittee operates a <Enter facility type here>. The facility was built in <Enter date here>.

# No changes have been made to the facility since the last permit renewal.

 **OR**

# The following changes have been made to the facility since the last permit renewal: <Enter changes here>.

process and control devices

# Existing air contaminant sources at the facility consist of the following:

## <Enter number> Boilers without emission controls, installed <enter month and year or just year for older units>

## <Enter number> cyclones which exhaust directly to the atmosphere, handling <enter material type>, installed <enter month and year or just year for older units>

## <Enter number and type of emissions devices>, with <enter typer of control device> emission controls, installed <enter month and year or just year for older units>

## fugitives

 **OR**

# Device/Process:

CONTINUOUS MONITORING DEVICES

# The facility has the following continuous monitoring devices:

compliance

# The facility will be inspected by DEQ personnel to ensure compliance with the permit conditions.

# The facility was inspected on <Enter date here> and found to be in compliance with permit conditions.

# During the prior permit period there were <Enter "no" or # of complaints>, complaints recorded for this facility.

# No enforcement actions have been taken against this source since the last permit renewal.

 **OR**

# The following enforcement actions have been taken against this source since the last permit renewal.

# The emissions from <Enter equipment type here> are scheduled to be in compliance with Department of Environmental Quality emission limitations by 1/1/1999 as indicated by the following compliance schedule.

special conditions

emissions

# Proposed PSEL information:

|  |  |  |  |
| --- | --- | --- | --- |
| Pollutant | Baseline Emission Rate (tons/yr) | Netting Basis | Plant Site Emission Limits (PSEL) |
| Previous (tons/yr) | Proposed (tons/yr) | Previous PSEL (tons/yr) | Proposed PSEL (tons/yr) | PSEL Increase (tons/yr) |
| PM |  |  |  |  |  |  |
| PM10 |  |  |  |  |  |  |
| PM2.5 |  |  |  |  |  |  |
| SO2 |  |  |  |  |  |  |
| NOx |  |  |  |  |  |  |
| CO |  |  |  |  |  |  |
| VOC |  |  |  |  |  |  |
| GHG (CO2e) |  |  |  |  |  |  |
| Other |  |  |  |  |  |  |

## The baseline emission rate was established in previous permitting actions and there is no new information that effects the previous determination.

## The netting basis is zero for Simple ACDPs and portable sources in accordance with OAR 340-222-0040(2).

## For Standard ACDPs, the netting basis is equal to the baseline emission rate minus emission reductions required by rule plus emission increases approved in accordance with OAR 340, division 224 (NSR rules). [Refer to the definition of netting basis in OAR 340-200-0020.] Discuss any changes to the netting basis as a result of this permitting action.

## The previous PSEL is the PSEL in the last permit.

## For Simple ACDPs, The proposed PSELs for all pollutants are equal to the Generic PSEL in accordance with OAR 340-216-0064(4)(b).

## For Standard ACDPs, explain the basis for the PSEL>

## <Provide the basis for the PSEL by either including specific information here or referring to the emission detail sheets attached to the review report.>

## The PSEL is a federally enforceable limit on the potential to emit.

# In addition to the PSEL, the permit includes the following:

|  |  |  |
| --- | --- | --- |
| Pollutant | Unassigned Emissions (tons/yr) | Emission Reduction Credits (tons/yr) |
| PM |  |  |
| PM10 |  |  |
| PM2.5 |  |  |
| SO2 |  |  |
| NOx |  |  |
| CO |  |  |
| VOC |  |  |
| GHG (CO2e) |  |  |
| Other |  |  |

## <Provide explanation of any unassigned emissions or emission reduction credits, including basis and terms>.

significant emission rate analysis

# For each pollutant, the proposed Plant Site Emission Limit is less than the Netting Basis plus the significant emission rate, thus no further air quality analysis is required.

# An analysis of the proposed PSEL increases over the Netting Basis is shown in the following table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Pollutant | SER | Requested increase over previous netting basis | Increase due to utilizing capacity that existed in baseline period | Increase due to physical changes or changes in method of operation | Increase due to changes to rules (i.e., the Generic PSEL) |
| PM | 25/5\* |  |  |  |  |
| PM10 | 15/5\* |  |  |  |  |
| PM2.5 | 10 |  |  |  |  |
| SO2 | 40 |  |  |  |  |
| NOx | 40 |  |  |  |  |
| CO | 100 |  |  |  |  |
| VOC | 40 |  |  |  |  |
| GHG (CO2e) | 75,000 |  |  |  |  |

\*SER for Medford-Ashland AQMA

# <PSEL rule (e.g., air quality analysis) or NSR/PSD discussion, if applicable>.

Title V major source applicability

criteria pollutants

# A major source is a facility that has the potential to emit 100 tons/yr or more of any criteria pollutant. For greenhouse gases, the source must also have the potential to emit 100,00 tons/year or more CO2e to be a major source. This facility <is/is not> a major source of criteria pollutant emissions.

Hazardous air pollutants

# A major source is a facility that has the potential to emit 10 tons/yr or more of any single HAP or 25 tons/yr or more of combined HAPs. This source <is/is not> a major source of hazardous air pollutants. The HAP emissions detail is provided at the end of this report. Provided below is a summary of the HAP emissions.

|  |  |
| --- | --- |
| Hazardous Air Pollutant | Potential to Emit (tons/year) |
|  |  |
|  |  |
| Total |  |

# Although the source has the capacity to emit above the Title V major source threshold levels, the permittee has elected not to obtain an Oregon Title V Operating Permit by requesting a PSEL below the major source threshold levels. The PSEL is a federally enforceable limit on PTE.

additional requirements

nsps applicability

# There are no sources at this facility for which NSPS standards have been promulgated.

 **OR**

# 40 CFR Part 60, Subpart <Enter Subpart here>  applicable to the source because <Enter reason here>.

neshaps/mact applicability

# There are no sources at this facility for which NESHAPS/MACT standards have been promulgated.

 **OR**

# 40 CFR Part 63, Subpart <Enter Subpart here>  applicable to the source because <Enter reason here>.

RACT applicability

# The RACT rules are not applicable to this source because it is not in the Portland AQMA, Medford AQMA, or Salem SKATS.

 **OR**

# The facility is located in the Portland AQMA, but it is not one of the listed source categories in OAR 340-232-0010, thus the RACT rules do not apply

 **OR**

# The facility is located in the Portland AQMA and the following RACT requirements apply: <Enter requirements here>.

tact applicability

# The source is meeting the states TACT/Highest and Best Rules by conducting the following activities:.

source testing

prior testing results

# The results of the most recent source tests are listed below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Emission Device | Test Date | Production Rate | Pollutant | Measured Value |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

proposed testing

# The <Enter equipment name here> will be tested at least once during the permit term for list pollutants emissions. The following production and control device parameters will be recorded during the tests: <Enter parameters here>.

public notice

# Pursuant to OAR 340-216-0064(5)(a), issuance of Simple Air Contaminant Discharge Permits require public notice in accordance with OAR 340-209-0030(3)(b), which requires DEQ to provide notice of the proposed permit action and a minimum of 30 days for interested persons to submit written comments. **The public notice was emailed/mailed on <date> and the comment period will end on <date>.**

# Pursuant to OAR 340-216-0066(4)(a)(A), issuance of Standard Air Contaminant Discharge Permits require public notice in accordance with OAR 340-209-0030(3)(b), which requires DEQ to provide notice of the proposed permit action and a minimum of 30 days for interested persons to submit written comments. **The public notice was emailed/mailed on <date> and the comment period will end on <date>.**

# Pursuant to OAR 340-216-0066(4)(a)(A), issuance of Standard Air Contaminant Discharge Permits require public notice in accordance with OAR 340-209-0030(3)(c), which requires DEQ to provide notice of the proposed permit action and a minimum of 35 days for interested persons to submit written comments. In addition, a hearing will be scheduled to allow interested persons to submit oral or written comments if DEQ receives written request for a hearing from ten persons, or from an organization representing at least ten persons, within 35 days of the mailing of the public notice. If a hearing is scheduled, DEQ will provide a minimum of 30 days notice for the hearing. **The public notice was emailed/mailed on <date> and the comment period will end on <date>; unless a hearing is scheduled.**

:xxx

**Attachment A: Definition of terms used in the PSEL section: [These definitions are provided for assistance, but need not be included in the review report. Instead, the permit writer should provide a discussion of the information included in the tables. These definitions could be retained as an attachment, if desired.]**

**Plant Site Emissions Limit Table:**

Pollutant: Plant site emission limits must be established for all regulated pollutants with a Significant Emission Rate in OAR 340-200-0020 that are emitted above the de minimis levels defined in 340-200-0020. It is possible to include the Generic PSEL for a single or combined HAPs so the source will not be considered a major source of HAPs. This would be important for any source that has the capacity to emit greater than 10 tons of a single HAP or 25 tons of combined HAPs but wants to avoid being subject to a future MACT standard.

Other pollutant mass emission limits may be established, but these should be considered performance standards and not PSELs. For example, during the initial permitting of a fiberglass facility, DEQ may establish a mass emissions limit specifically for styrene. This limit should not be considered a PSEL because there is no ambient air quality, NSPS, or Part 61 NESHAP standard for styrene, but the styrene would be included in the PSEL for VOC. Another example: if DEQ believes it is necessary to establish an ammonia emission limit for a combustion device utilizing ammonia injection for control of NOx. The ammonia limit should not be a PSEL because there is no ambient air quality standard for ammonia. Lead is one hazardous air pollutant for which it may be necessary to establish a PSEL because there is an ambient air quality standard for lead. However, it is not included in the table above because most sources do not emit lead above the de minimis level. Lead would have to be added for the sources that do emit lead.

The annual PSEL applies to each 12 consecutive month period. Therefore, it is considered a limit on the potential to emit (PTE). Short term PSELs (e.g., lb/hr, lb/day, lb/week, lb/month) are not required, except for sources located in the Medford-Ashland AQMA must have a lb/day PSEL for PM10 if the emissions are greater than 5 lbs/day.

The baseline emission rate equals the actual pollutant emissions during the baseline period of 1977 or 1978 or 12 consecutive months in the period 2000 to 2010 for greenhouse gases. An earlier year may be used if neither 1977 nor 1978 are representative of normal operations but not for greenhouse gases. (Note: Each source should have already identified an appropriate baseline period, so only in very rare cases will DEQ approve an alternative year.) Once established, the baseline emission rate never changes, except it may be corrected when better information about the actual emissions during the baseline period becomes available (e.g., source test data). For new sources (those that were installed after 1978 or after 2010 for greenhouse gases), the baseline emission rate is zero for all pollutants. If a current source operated in the baseline period, and continuously since that time, the source has a baseline emission rate whether or not it is permitted. However, a source that permanently shut down and then started up again after the baseline period would have a baseline emission rate equal to zero, even if the source is the original facility and includes the original equipment. In addition, any source that elects to have a Basic, General, or Simple ACDP forfeits their baseline emission rate.

With the first permitting action for a source after July 1, 2001, the production basis for the baseline emission rate may only be changed if a material mistake or an inaccurate statement was made in establishing the production basis for the baseline emission rate.

The netting basis is the baseline for determining net increases as a result of a major modification as defined in OAR 340-200-0020. The netting basis equals the baseline emission rate or the emissions that were approved during the last NSR action in accordance with OAR Chapter 340, Division 224, but only for the pollutants subject to NSR. In addition, the netting basis must be adjusted to reflect any emission reductions required by rule, unassigned emissions, and emission reduction credits. Reductions required by rule will affect the netting basis at the time the rule is adopted, which could occur at any time during the permit term. The previous netting basis would be adjusted at the next permit renewal.

In situations where actual emissions are set equal to PTE, the netting basis will be reduced from PTE down to the highest actual emissions.

* For GHG sources that were approved prior to 12/31/10 but had not begun normal operations by 12/31/10, PTE will be reduced to the highest actual emissions 10 years after the baseline period.
* For sources permitted under division 224 after 5/1/11, PTE will be reduced to the highest actual emissions 10 years after the date the permit is issued.
* DEQ may extend the date or resetting by five additional years upon satisfactory demonstration by the source that construction is ongoing or normal operation has not yet been achieved.

The reduction to the netting basis will be required before any future netting can take place to prevent sources from using the “potential emissions” to offset new projects and net out of NSR. Sources that reduce actual emissions because of voluntary controls will not lose that portion of the netting basis. In addition, the reduction to the netting basis will not affect the PSEL so that sources will be able to utilize the capacity that was allowed by the NSR permit.

Both the previous and proposed netting basis should be shown in the columns if it is being changed due to the current permit action. If the netting basis is changed, the review report will also need a complete discussion of the NSR action or reductions due to a new rule. Normally, the netting basis is not changed with a Title V permitting action because the rules require that an ACDP be issued for any NSR/PSD action.

The previous PSEL is the PSEL approved in the previous permit. In some cases, the previous PSEL will need to be corrected if new emissions information becomes available. If there are corrections, they should be explained in the review report. The previous PSEL is provided to show whether there are any proposed PSEL increases.

The proposed PSEL is the PSEL requested by the permittee and approved by DEQ. The PSEL shall equal the netting basis and be adjusted upward or downward in accordance with OAR 340-222-0041. Since the PSEL cannot include emission reductions required by a rule, the PSEL is equal to the netting basis plus any past or present requested increases approved by DEQ. Requested increases are evaluated as follows:

1. If the requested increase is due to utilizing existing capacity that also existed during the baseline period (e.g., the increase is not due to a physical modification and it is not due to, or associated with, capacity that was installed after the baseline period), the permittee shall demonstrate a need and:

* demonstrate that the requested increase above the netting baseline is less than the significant emission rate (SER); or
* if greater than or equal to the SER, provide an assessment of the air quality impact showing that no ambient air quality standard or PSD increment will be violated in an attainment area or an offset has been obtained in a nonattainment area.

2. If the requested increase is due to a proposed physical modification or change in the method of operation (e.g., de-bottle necking that would increase the capacity of the facility), the permittee shall:

* demonstrate that the net emission increase above the netting baseline is less than the significant emission rate (SER);
* if greater than or equal to the SER but not subject to NSR, provide an assessment of the air quality impact showing that no ambient air quality standard or PSD increment will be violated in an attainment area or an offset has been obtained in a nonattainment area; or
* if greater than or equal to the SER and subject to NSR, satisfy the requirements of the NSR rules in OAR Chapter 340, Division 224.

3. If the requested increase is due to both utilizing existing capacity and a physical modification, the increases shall be tracked separately as shown in the significant emissions rate table. If the total increase is greater than the SER, but the increase due to a physical modification is less than the SER, the source shall satisfy the requirements of item 1 above.

4. PSELs shall not be established which allow emissions in excess of those allowed by any applicable federal or state regulation in accordance with OAR 340-222-0043(1). Reductions required by rule do not affect the baseline emission rate, but they will affect the netting basis.

PSEL increase means the difference between the proposed PSEL and the previous PSEL. This can be a positive or negative number. This information is primarily for the purpose of keeping the public informed of any recent changes in the allowable emissions of a source. The information is not used to determine if an SER has been exceeded. SER exceedances are determined as the difference between the proposed PSEL and the netting basis.

Capacity means the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Capacity is necessary for establishing the PSEL and unassigned emissions if the current capacity is less than the netting basis.

Potential to Emit (PTE) means the lesser of the capacity of a source or the maximum allowable emissions taking into consideration any physical or operational limitation, including the PSEL, air pollution control equipment and restrictions on hours of operation or on the type and amount of material combusted, stored, or processed, if the limitation is enforceable by the DEQ and EPA.

PTE is used to determine which type of permit is required. If the PTE is less than the Title V major source threshold levels, the source would be required to obtain an ACDP. If the PTE is greater than the Title V major source threshold levels, the source would be required to obtain an Oregon Title V Air Operating Permit.

The PSEL can be used to establish the PTE but the PSEL shall not be reduced solely because of the PTE. However, it is not expected that any previous action that decreased PSELs to equal the PTE be reversed.

Unassigned emissions are that portion of the netting basis that is greater than the source’s current capacity to emit, excluding any credits. The source’s current capacity can be thought of as the source’s potential emissions at the maximum possible production levels without considering the PSEL. If applicable, unassigned emissions are established during permit renewals. If the unassigned emissions are not used during the permit term, they are reduced to the significant emission rate during the next permit renewal.

Emission Reduction Credits are established by OAR 340, Division 268. Emission reduction credits are a portion of the netting basis. Credits need to be identified separately in the permit with the terms (e.g., expiration date) of the credit clearly stated. The baseline emission rate is not affected by credits and the PTE of a source would, by definition, not include any credits, whether transferred or banked.

Emission reduction credits, whether from shutdowns, curtailments, or over-control, are available for external offsets for a period of two years from the date of the actual emissions reduction. Emission reduction credits may also be banked for a specified period up to ten years. Requests for emission reduction credit banking shall be submitted to DEQ prior to or within two years following the actual emissions reduction.

If credits are not used either internally or externally within the banked period, they are converted to unassigned emissions.

**Significant Emission Rate table:**

The SER (significant emission rate) for each pollutant is defined in OAR 340-200-0020. Pollutant emission increases above the SER are subject to additional requirements. For PSEL increases that do not involve a physical modification or change in the method of operation, an air quality assessment is required to show that there will not be a violation of an ambient air quality standard or PSD increment. For PSEL increases that are the result of a physical modification or change in the method of operation at major sources in nonattainment and maintenance areas or federal major sources in attainment areas, the permittee must comply with the NSR requirements in OAR Chapter 340, Division 224.

The requested increase is the difference between the proposed PSEL and the previous netting basis less any credits and reductions required by rule since the last permit action. The requested increase is also divided into portions that are due to utilization of capacity that existed in the baseline period and/or physical modifications at the facility as discussed in the Proposed PSEL section above. If the requested increase is greater than the SER, the review report will have to include a discussion of why DEQ is approving the increase. This could be the results of an air quality assessment or NSR review, depending on the reason for the increase.

Attachment B: Plant Site Emissions Detail Guidance

PURPOSE:

Emissions detail sheets are necessary for providing the basis for the Plant Site Emissions Limit (PSEL) and tracking changes in emissions at the facility. For sources that existed in the baseline period, the detail sheet needs to show the actual emissions in the baseline period and projected emissions given the current configuration of facility. For sources that began operations after the baseline period, the detail sheet only needs to show projected emissions based on the current configuration of the facility. The baseline period for all pollutants other than greenhouse gases is any 12 consecutive month period during calendar years 1977 and 1978. For greenhouse gases, the baseline period is any 12 consecutive month period between 1/1/2000 and 12/31/2010.

Besides showing the basis for the “plant wide” emissions, the detail sheet needs to show emissions by device or activity. This is necessary for periodically reporting to EPA state wide emissions inventory.

The information provided in the detail sheet can be used for demonstrating compliance with the PSEL, but not always. For instance, a continuous emission monitoring system (CEMS) could be used for monitoring compliance with a PSEL that is equal to the baseline emission rate, which was determined from an emission factor times actual production levels in the baseline period. PSEL compliance procedures should be included in the permit. (See also PSEL compliance instructions included with PSEL compliance sections of permit templates.)

GUIDANCE:

There are basically three ways to determine emissions from a source: 1) actual measured emissions using a CEMS (continuous predictive emissions monitors fit in this category); 2) material balance (primarily VOC and SO2sources); and 3) calculated emissions based on emissions factors and production or process rates. Of these methods, the emission factor approach is most common.

Constructing detail sheets:

For simple, single source facilities with minimal emissions, it is probably easiest to show the basis for emissions in review report immediately following the PSEL section. For other sources, emissions are commonly shown in detail sheets attached to the review report using a spread sheet application such as Excel. Provide enough information so others can understand how emissions are being determined.

**Emission factors:**

Usually, emissions are determined using emission factors and production or process rates. This is a simple means of calculating normal actual or projected emissions. Emission factors do not account for emission variations due to such things as startups, shutdowns, operating load fluctuations, ambient conditions, fuel quality. However, emission factors are a useful tool for establishing historical emissions and the only way to determine emissions when continuous emissions monitors and/or material balance information is not available.

Emission factors relate mass of emissions to a process or production unit level. Example: a particulate matter emission factor for rock crushers relates mass of particulate matter emitted to tons of rock crushed (lb PM/ton of rock crushed). Using this factor, one needs the total amount of rock crushed in the baseline period to determine baseline emission rate, or projected amount of rock that will be crushed to calculated the projected emissions. When using this method, detail sheet needs to identify emission source, long term (and in some areas such as Medford, short term) production levels, emission factor, and calculated emissions. The basis (e.g, reference) for the factor should be provided in the detail sheet or as supplement to the detail sheet. Emission factors should be based on the best information available which could be, but is not limited to any of the following:

* average of actual source test data provided equipment has not been modified;
* average of source data from similar type equipment;
* industry factors based on studies of the processes;
* DEQ factors (use with caution)
* EPA AP-42 factors (use with caution. These are rated from A-E, depending on confidence level); or
* Engineering estimates (may include emission control factors)

Example detail sheet using emission factors:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Device | Pollutant | short term production level | annual production level | emission factor | reference | short term emissions (lbs/day) | annual emissions (tons/yr) |
| Rock  | PM | 900 tons/day | 300,000 tons | 0.041 lb/ton | DEQ | 18.8 | 3.1 |
| crusher | PM10 | 900 tons/day | 300,000 tons | 0.02 lb/ton | DEQ | 3.0 | 0.5 |
| Generator | PM | 90 gal/day | 24,000 gal. | 33.5 lb/1000 gal | AIRS | 3.0 | 0.4 |
|  | PM10 | 90 gal/day | 24,000 gal. | 32 lb/1000 gal | AIRS | 2.9 | 0.4 |
|  | CO | 90 gal/day | 24,000 gal. | 102 lb/1000 gal | AIRS | 9.2 | 1.2 |
|  | NOx | 90 gal/day | 24,000 gal. | 469 lb/1000 gal | AIRS | 42.2 | 5.6 |
|  | SO2 | 90 gal/day | 24,000 gal. | 31.2 lb/1000 gal | AIRS | 2.8 | 0.4 |
|  | VOC | 90 gal/day | 24,000 gal. | 32.1 lb/1000 gal | AIRS | 2.9 | 0.4 |

It is not necessary to show the emissions detail for every emissions source at the facility. If numerous devices have the same emission factor, combine them in the detail sheet. Example: the facility may have 12 cyclones for which the same emission factor is used to calculate emissions. The detail sheet could have a line item for Cyclones and not address each cyclone. The same is true for multiple boilers, coating lines (see below), or any device or process that use the same emission factor and production or process data to calculate emissions.

If there are multiple devices or activities at a facility, it is sometimes better to organize the detail sheet by pollutant rather than device so it is easier to show total emissions by pollutant. Another technique is to create a separate pollutant summary table.

**Material balance:**

Sometimes emissions are determined by material balance calculation. This means the mass of pollutant emitted is equal to the mass of pollutant used in the process. Example: Solvent cleaning. If the mass of emissions does not equal the mass used in the process, a combination of material balance and emission factors or control factors will probably need to be used to determine emissions. Example: Styrene emissions from fiberglass processes -only a portion of the VOC is emitted because much of it goes into the product. Another example would be a coating line that uses a thermal oxidizer to control VOC emissions. Material balance may be used for determining the amount of VOC going to thermal oxidizer, but the emissions are determined by applying a control factor for the thermal oxidizer. In either case, the review report or detail sheet should provide the basis for the baseline emission rate and PSEL.

Example below:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Process | \*VOC used in process (lb/day) | \*VOC used in process (ton/yr)  | VOC emission factor | 1 – VOC control factor | VOC (lb/day) | VOC (ton/yr) |
| Coating line 1 | 1000 | 120 | 1.0 | 1.0 | 1000 | 120 |
| Coating line 2 | 1000 | 120 | 1.0 | 0.1 | 100 | 12 |
| Fiberglass 1 | 1000 | 120 | .35 | 1.0 | 350 | 42 |
| Fiberglass 2 | 1000 | 120 | .35 | 0.1 | 35 | 4.2 |

\* VOC used in process is determined using material safety data sheets and assuming all VOC is emitted to atmosphere. Material balance equation depends on type of product, but the following is common approach:

VOC = M x d x %VOC/100

where,

VOC = amount of VOC used in the process (lbs);

M = gallons of VOC containing material used (gallons);

d = density of VOC containing material (lb/gallon);

%VOC = VOC content of the material as a percent.

To show the baseline emission rate, the detail sheet will include actual data from the baseline period. For proposed PSELs, it may not be necessary to use a detail sheet to show basis of PSEL when using material balance approach. If you don’t use detail sheet, formulas for calculating emissions should be clearly stated; especially when there is mix of controlled and uncontrolled processes. If PSEL is greater than baseline emission rate, show the “demonstrated need” in order to approve the increase. Often the demonstrated need is based on “typical” worst case product.

**Continuous monitoring data:**

In rare cases, there may be a continuous emissions monitoring device on an emissions unit so PSEL can be determined from actual emissions data. This is rare because there were not many CEMS in place during the baseline period and new sources cannot have CEMS data until they begin operations. However, if there is CEMS data, detail sheet does not need information about production or emission factors unless there is another need for the information. Example detail sheet using CEMS data:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Device | Pollutant | Production (1000 lb of steam/day) | Production (1000 lb of steam/yr) | emission factor (lb/1000 lb of steam) | reference | short term emissions (lbs/day) | annual emissions (tons/yr) |
| Boiler A  | PM/PM10 | 7200 | 2,500,000 | 0.04 lb/1000 lb steam | ST data | 288 | 50 |
|  | CO | NA | NA | NA | CEMS | 14,200 | 2500 |
|  | NOx | NA | NA | NA | CEMS | 2,232 | 388 |
|  | SO2 | 7200 | 2,500,000 | 0.014lb/1000 lb steam | CEMS | 101 | 18 |
|  | VOC | 7200 | 2,500,000 | 0.13 lb/1000 lb steam | ST data | 936 | 163 |

NA = not applicable.

Although detail sheets are useful tools for summarizing emissions information about a facility, they are not the only way to present information. For sources with only one type of emissions and those emissions are determined by a material balance, it may be simpler to describe emissions in narrative type form and provide equations for calculating emissions. There should be some basis to emissions other than a calculation procedure. Usually, basis will be baseline emission rate. For newer sources, a typical operating year may be used to show emissions by individual devices or processes.

As seen from examples provided in this guidance, spreadsheets will vary depending on type of source or method used to estimate emissions. It is difficult to develop one standardized format to fit all situations. Permit writers should customize spreadsheets to fit individual sources.