Polk County Public Works – Air Quality Division (AQD)

AQD - Construction Permit Application

- *Instructions that will assist in the completion of the permit application are on the reverse side*

(1) COMPANY NAME
Legal Name:

(2) RESPONSIBLE OFFICIAL CERTIFICATION	
I certify that based on information and belief formed after reasonable inquiry, the enclosed documents including the attachments are true, accurate, and complete. Responsible Official Signature: Print Name_____Title:_____ Signature:_____Date:_____	*Office Use Only:* Date Received_____ Construction Permit #_____ Energov# _____ Facility (AIRS#)_____ Permit Fee $_____ Check# _____ Issue Date_____

(3) RESPONSIBLE OFFICIAL/FACILITY CONTACT & MAILING INFORMATION			
Name: Title:			Telephone No.:
Street Address	City	State	Zip

(4) EQUIPMENT LOCATION			
Street Address	City	State IA	Zip
Is the Equipment Portable?	☐ Yes, other Locations(s): ☐ No		

(5) PERMIT PREPARER/CONSULTANT			
Name: Title:		Iowa P.E. Registration No. (if any):	
Company Name		Telephone: Fax:	
Street Address	City	State	Zip

(6) PERMIT APPLICATION TYPE
☐ New Source ☐ Modification of an existing permitted source (Previous Permit No._____) ☐ Other, please explain:
(7) Briefly describe the activity of your business and its principal product:
(8) Provide: North American Industry Classification System (*NAICS*):_____http://www.epa.gov/enviro/html/naics_lkup.html Standard Industrial Classification (*SIC*):_____ http://www.osha.gov/pls/imis/sicsearch.html
(9) Permit Application Fees: ☐Major (Filing Fee + Review Fee =$1650) ☐Minor (Filing Fee+ Review Fee = $358*) * 6% of the actual cost of the new control equipment excluding installation costs, whichever is greater. Not to exceed $6,700. $Amount enclosed: _____ (attach documentation of control equipment cost)

Instructions

Page 1 of the construction permit application is used by Polk County to identify a company or facility, equipment locations, and personnel involved in the permit application. Additional information may be requested.

1. Provide the name of the company or organization applying for the permit.

2. Fill in the certification section with a signature, name, title and date. The certification must be signed by a responsible official. A responsible official could be the owner, the designated representative of the owner, or the permit engineer who prepared the application.

3. Provide the name, address, and telephone number of the person who can be reached for questions about your permit application during the review.

4. If the equipment to be permitted is at a different location than the plant permit contact person's address, give the address here. If the equipment is at the same location, mark "same". If the equipment is portable (such as an asphalt plant), identify by marking "yes" here. Also, if there are other known locations where portable equipment will be used, write the location(s) beside "Other location(s)". Attach a separate sheet, if needed, to list multiple locations.

5. If the permit application has been prepared by a consultant, provide the name, address, etc., of the consultant. An Iowa Professional Engineering registration number should be available from the consultant. If the permit application was prepared by a company employee who is not a registered Professional Engineer, then leave this blank.

6. Mark the type of permit you are applying for, such as a new source which has not been constructed, an existing permitted source that is being modified, or an existing source (as-built) that is applying for a permit for the first time.

7. Briefly describe the primary activity and principal product of your business.

8. Provide the NAICS code for your business. The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.

   Provide the SIC code (if known) for your business. The Standard Industrial Classification codes are a compilation by the federal government of businesses by type of activity in which they are engaged. Standard Industrial Classification (SIC) codes are intended to cover the entire field of economic activity.

   North American Industry Classification System (*NAICS*), http://www.epa.gov/enviro/html/naics_lkup.html

   Standard Industrial Classification *(SIC*), http://www.osha.gov/pls/imis/sicsearch.html

9. Calculate your permit fee. If applicable, provide documentation showing the cost of the *new control* equipment. Do not include the *new control* equipment installation cost.

   Air Quality Construction Permit Fees:
   Filing & Review Fees:
   Major Sources per Application $ 1650.00
   Minor Sources per Application $ 358.00 or If you install *new control* equipment (i.e. bag house), the review fee is (6%) of the cost of the new control equipment excluding installation. Not to exceed $6700.00

AQD - Construction Permit Application

Emission Unit (EU) Information

- *Instructions that will assist in the completion of the permit application are on the reverse side*

(1) COMPANY NAME		
Legal Name:		
EMISSION UNIT DESCRIPTION AND SPECIFICATIONS		
(1) Emission Unit (EU) Name:	(2) EU Identification Number:	(3) Date of Construction:
(4) Manufacturer:	(5) Model:	(6) Date of Modification (if applicable):
(7) Maximum Capacity:	(8) SCC Code (if known):	(9) Control Equipment (CE) Name (if any):
(10) Control Equipment Identification # (if any):		

(11) Are you requesting any permit limits?

☐ No

☐ Yes If yes, write down all that apply:

(a) Hourly limits:_____

(b) Production limits:_____

(c) Material usage limits: _____

(d) Other: _____

Rationale for requesting the limit(s):

12) Provide a description <u>and</u> a drawing to show quantitatively how product or material flows through this emission unit. Include product input and output, fuel throughput, and any parameters which impact air emissions. If space below is insufficient, attach a separate sheet.

Instructions

Page 3 of the construction permit application is designed to provide Polk County about the emission unit (EU), including a written description of how product and/or material flow through the emission unit. An emission unit is the equipment or process which generates emissions of regulated air pollutants. This form is used by the reviewer to become familiar with the emission unit.

Please put your company name in the box provided. This is useful in case any pages of the application get separated.

1. Provide the name of the emission unit, such as "paint booth", "boiler", “generator”, etc.

2. Provide the identification number of the emission unit. This number is used for this permit application to identify the emission unit. It can be any number. However, if you submitted a Title V permit application, the numbers used for identification purposes in this application should be consistent with the ID numbers used in your Title V application. Also, the ID number should match the ID numbers used on other construction permit applications and within this application. Each emission unit in the application must have its own number. If there are multiple emission units which are involved in this permit application and they are not identical, fill out a separate form for each emission unit. If you have two emission units going to one control device with one stack, fill out a form for both emission units if they are not identical. If the emission units are identical, attach a separate sheet listing each emission unit by name, number, date of construction, date of modification (if applicable) and any other information which is different.

3. The date of construction of the emission unit is the date, month, and year in which construction or modification begins as defined in Chapter V of the Polk County Board of Health Rules and Regulations.

4. Provide the manufacturer of the emission unit's name. If the unit is custom-designed or homemade, indicate this on the application.

5. Provide the model number of the emission unit. If the unit is custom-designed or homemade, indicate this.

6. If the emission unit has been or will be modified, give the date, month and year of the most recent or future modification.

7. Provide the maximum capacity of the emission unit or process which is generating emissions of air pollutants. For example, a bake oven would have a capacity in terms of heat input of natural gas it is fueled on (in MMBtu/hr); an assembly line would have a capacity of parts produced per day. This capacity should be based on a rated nameplate or manufacturer's literature capacity.

8. The Source Classification Code (SCC) represents a unique process or function within a source category associated with a point of air pollution emissions. SCC's were developed by the EPA to aid in classifying and tabulating air pollution emissions. SCCs try to estimate the emissions of the six criteria pollutants by providing emission factors for various industrial processes. For example, if you have a process heater fueled on natural gas with a rating if 50 MMBtu/hr, then your SCC code is 1-02-006-02 and there are emission factors listed to estimate the emissions of the six criteria pollutants from your process heater. If you do not know the emission unit's SCC code, then leave this blank.

9. Provide the control device name, if there is a control device attached to this emission unit. The name and number of the control device should be consistent throughout the application.

10. Provide the control equipment number, if there is a control device attached to this emission unit. The name and number of the control device should be consistent throughout the application.

11. If you wish to have permit limits placed on the emission unit mark "Yes". Then, write down each type of limit that applies to your permit application and put the requested limit. For example, production limits may be in terms of parts produced per year, material usage limits may be in gallons per day. If requesting a permit limit(s), indicate the reason for the requested limit. This is to help Polk County and the applicant determine whether the limits are necessary, and whether or not they will accomplish the desired purpose.

12. The process description should include what raw materials or products enter and exit the emission unit, how they flow through the emission unit, any fuel usage which occurs at the emission unit, and any other material or product which flows into and out of the emission unit.

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Control Equipment (CE) and Stack/Vent Information

- *Instructions that will assist in the completion of the permit application are on the reverse side*

(1) COMPANY NAME		
Legal Name:		
CONTROL EQUIPMENT (CE) DESCRIPTION AND SPECIFICATIONS		
(1) Control Equipment (CE) Name and Description: ☐ Not Applicable ☐ Condensers ☐ Adsorbers ☐ Dry Filters ☐ Catalytic or Thermal Oxidation ☐ Cyclones/Settling Chambers ☐ Electrostatic Precipitators ☐ Wet Collection Systems ☐ Baghouses/Fabric Filters ☐ Other/Miscellaneous, provide a description:_____		
(2) Control Equipment (CE) Identification #:	(3) Date of Installation:	(4) Manufacturer:
(5) Model:	(6) Date of Modification (if any):	
(7) Is operating schedule different than emission unit(s) controlled? ☐No ☐Yes If yes, specify the schedule:		
8) Capture Hood Involved? ☐No ☐Yes	(9) Capture Efficiency	(10) Emission Units (EU(s)) Controlled:
CONTROL EQUIPMENT (CE) & STACK TEST SUPPORTING DOCUMENTATION		
(11) Control efficiency supporting document attached: ☐Manufacturer's design specifications and performance data/guarantee ☐Stack test report		
Pollutant Controlled		
Control Efficiency %		
12) If manufacturer's data is not available, use space below or attach a separate sheet to provide the control equipment design specifications and performance data to support the above-mentioned control efficiency.		
EMISSION POINT (EP) STACK/VENT SPECIFICATIONS		
(13) Emission Point (EP) (Stack/Vent) Identification #:	(14) Height above ground: ( ) feet	(15) ☐circular stack, diameter is ( ) inches ☐other, size is ( ) inches x inches
(16) Discharge style: ☐VR (Vertical, with obstructing rain cap) ☐V (Vertical, with unobstructing rain cap or without rain cap) ☐D (Downward discharge) ☐H (Horizontal discharge) ☐O (Other, please specify_____)		
EXHAUST INFORMATION		
17) Rated Flow Rate (☐acfm ☐scfm):	(18) Moisture Content % (if known):	(19) Exit Temperature (°F):

Instructions

Page 5 of the construction permit application is used by Polk County to identify the control equipment and the emission point (stack or vent) used for the emission unit(s) proposed in this permit application. This form also asks for supporting documents to verify stated control efficiencies and details about the emission point. Additional information may be requested.

Please put your company name in the box provided. This is useful in case any pages of the application get separated.

1. Provide the name of the type of control device used. IF THERE IS NO CONTROL DEVICE ATTACHED TO THE EMISSION UNIT DESCRIBED IN (1) MARK "Not Applicable" AND GO TO BOXES (13) THROUGH (19).
2. Identify the control device by number. This number should match numbers used in other permit applications and be consistent within this application.
3. Provide the date the control device was installed or will be installed at the emission unit(s).
4. Provide the manufacturer's name for the control device. If custom-designed or homemade, indicate here.
5. Provide the model number for the control device. If custom-designed or homemade, indicate here.
6. If the control device has been or will be modified, write the date, month and year of the modification.
7. Indicate whether the control device operates on the same schedule as the emission unit it controls. If it does not, write down what the schedule is.
8. Indicate whether there is a capture hood associated with the emission unit.
9. If there is a capture hood, write down its capture efficiency, if known.
10. Write down the emission unit number(s) that are controlled by this control device.
11. If you have supporting documentation for the control efficiency(s) of the control equipment mark the type of documentation you have, either manufacturer's data or stack testing report. Manufacturer's data can include a manufacturer's guaranteed emission rate or guaranteed control efficiency. Attach the supporting documentation and label this attachment. Then, list the pollutant and provide the estimated or proven control efficiency for the control device on this form. If the control device will be controlling more than one pollutant at this emission unit, list all pollutants and the corresponding efficiencies.
12. If you do not have the documentation requested in box (11), provide other documentation for the control efficiency such as calculations or design data or other reference document. You may use the space in box (12) or attach a separate sheet.
13. Provide the number(s) of the emission point(s). An emission point is the same as a stack or vent.
14. Provide the height of the top of the emission point(s) above ground. If you have multiple stacks from one emission unit or control device, attach a sheet that gives the information requested in (13)-(16) for each stack.
15. Indicate by checking a box whether the stack or vent opening is circular or other shape and write in the dimensions of the opening.
16. Indicate by checking a box what the discharge style is.
17. If there is a fan with the emission point, give the rated capacity of the fan in actual or standard cubic feet.
18. Provide the moisture content, in percent, of the exhaust gas, if known. If unknown, leave blank.
19. Provide the temperature of the exhaust at the emission point in degrees Fahrenheit.
20. Collection of Greenhouse Gas (GHG) Emissions Data - Starting on July 2, 2007, construction permit applications must include potential greenhouse gas emissions for the project. Applications received without this information will be considered incomplete and the permit(s) cannot be issued until the information has been received. The following are the GHG emissions that must be accounted:
    (a) CO_2: Carbon dioxide.
    (b) CH_4: Methane.
    (c) N_2O: Nitrous oxide. Also known as dinitrogen oxide or dinitrogen monoxide or laughing gas.
    (d) SF_6: Sulfur hexafluoride.
    (e) HFC: Hydrofluorocarbons: SEE TABLE A: COMMON GREENHOUSE GASES
    (f) PFC: Perfluorocarbons: SEE TABLE A: COMMON GREENHOUSE GASES

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SUMMARY OF EMISSIONS FROM EMISSION POINT (EP)

- *Instructions that will assist in the completion of the permit application are on the reverse side*

	(1) COMPANY NAME
	Legal Name:

(2) Emission Point (EP) (Stack/Vent) Number(s):		(3) Process Flow Diagram

	SUMMARY OF EMISSIONS FROM THIS EMISSION POINT (EP)

4) Emission Calculation. These calculation are based on (check all that apply): ☐Emission Factors ☐Requested Limits ☐Mass Balance ☐Testing Data ☐Other, describe:

(5) Emission Point (EP):_____	Pollutant	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Lead	CARBON DIOXIDE (tpy)	METHANE (tpy)	NITROUS OXIDE (tpy)	SULFUR HEXAFLUORIDE (lbs/yr)	HYDROFLUORO CARBONS (lbs/yr)	PERFLUORO CARBONS (lbs/yr)
	Concentration														
Emissions (After control if applicable)	lbs/hr														
	tons/year or lbs/yr														

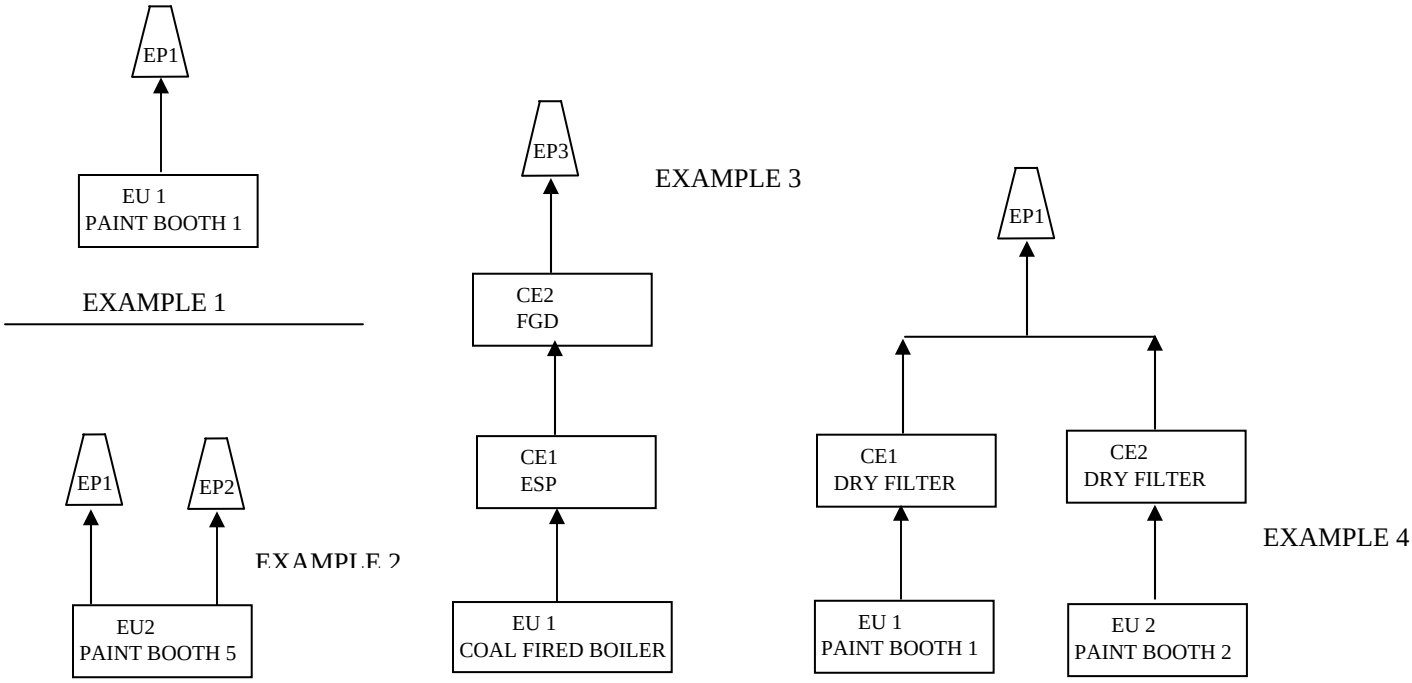
6) Estimate of Actual Emissions - Actual emissions are the actual rate of air pollution from an emission unit calculated using the emission unit's actual operating hours, production rates, and types of materials processed, stored or combusted for the calendar year. General equation for calculating actual emissions with control equipment: (Actual Throughput) x (Emission Factor) x (Control Efficiency) x (conversion factor to tons) = tons per year

Emission Point (EP):_____	Pollutant	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Lead	CARBON DIOXIDE (tpy)	METHANE (tpy)	NITROUS OXIDE (tpy)	SULFUR HEXAFLUORIDE (lbs/yr)	HYDROFLUORO CARBONS (lbs/yr)	PERFLUORO CARBONS (lbs/yr)
	Concentration														
Emissions (After control if applicable)	lbs/hr														
	tons/year or lbs/yr														

Instructions

Page 7 of this construction permit application is used by Polk County to better understand the process that is being permitted and to verify the emissions calculations and how they are calculated.

1. Provide company name.
2. Provide the number of the emission point (stack(s) or vent(s)) through which the emission unit(s) will exhaust into the atmosphere. This should be the same number as on all other forms submitted.
3. Process Flow Diagram:
   Identify all emission units, showing the pathway of air emissions from each emission unit through each control device (if any) to the stack of vent (see examples below). Identification numbers used in the flow diagram must be consistent throughout this application. You may use this form or attach another diagram if it provides all the information required.



4. Emission Calculations:
   Check the appropriate box to indicate the basis for emission calculations. Show emissions calculations in detail for actual and potential to emit for each air pollutant emitted from this emission point. Include a description of any assumptions used in making the calculations. If more space is needed, attach an 8.5" x 11" sheet(s) labeled accordingly.
5. Summarize the emissions calculations in this table for each air pollutant emitted from this emission point (stack or vent). Emissions should be calculated as potential to emit. Potential to emit is the uncontrolled emissions at maximum design or achievable capacity (whichever is higher), and year-round continuous operation (8760 hours per year). IF there are no federally-enforceable permit limits on the source. If the emission point will have a control device or some other proposed permit limitation such as hours of operation or material usage, this can be used in calculating potential to emit. For pollutant definitions, refer to Form EI instructions number 5. Indicate the concentration unit for each pollutant. Concentration is usually expressed in grains per standard cubic feet for particulates, and parts per million by volume or pounds per million Btu for gaseous pollutants. The blank spaces are for regulated Hazardous Air Pollutants for optional use by Polk County in the future.
6. Estimate of Actual Emissions - Actual emissions are the actual rate of air pollution from an emission unit calculated using the emission unit's actual operating hours, production rates, and types of materials processed, stored or combusted for the calendar year. General equation for calculating actual emissions with control equipment: (Actual Throughput) x (Emission Factor) x (Control Efficiency) x (conversion factor to tons) = tons per year

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SUMMARY OF FACILITY EMISSIONS/INVENTORY-(FACIILTY-WIDE)

- Instructions that will assist in the completion of the permit application are on the reverse side

Company Name (Legal Name):																			
Stack/Vent Emissions Summary																			
(1)	(2)	(3)	(4)		(5) Potential or Permitted Emission Rates (tons/yr or lbs/yr)														
EP ID	EU ID	Source Description	Permit Number		PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Lead	CARBON DIOXIDE (tpy)	METHANE (tpy)	NITROUS OXIDE (tpy)	SULFUR HEXAFLUORIDE (lbs/yr)	HYDROFLUOROCARBONS (lbs/yr)	PERFLUOROCARBONS (LBS/YR)
(6) Total Stack Emission																		
(7) Fugitive Source Emissions Summary																		
Fugitive Source ID		Fugitive Source Description	Permit Number, if applicaable															
(8) Total Fugitive Emissions																		
(9) Total Facility Emissions																		

Instructions:

Page 9 is designed to provide the reviewer information on plant-wide total emissions and emissions from each source. Total emissions are verified by checking emissions from each source and are used to classify the plant into the appropriate categories for PSD, NSPS, etc. If your facility is a Title V facility, you may submit annual emissions inventory data in lieu of this form if the inventory is current and contains all the information requested in this form. Additional information may be requested.

Fill in your company's legal name.

1. Provide the emission point (stack or vent) identification number. Include the emission point number of the source you are seeking a permit for.
2. Provide the emission unit(s) identification number.
3. Provide a brief description of the source identified in 1. & 2.
4. Provide the permit number for the source, if any.
5. Fill in the rate of potential to emit or permitted emission rate in tons per year for each pollutant. Potential to emit is defined as uncontrolled emissions at maximum design or achievable capacity (whichever is higher) and year-round continuous operation (8760 hours per year) if there are no federally-enforceable permit limits on the source. If an emission point has been permitted, then the permitted emission rate in tons per year is the potential to emit. If the emission point will have a control device or some other limitation such as hours or material usage, this can be used in calculating potential to emit. Proposed or existing permit limits may be considered to be potential to emit. The following are regulated pollutants which must be accounted for: PM: All Particulate Matter (same as total suspended particulate matter), PM10: Particulate matter with an aerodynamic diameter of ten microns or less, as measured by an EPA-approved reference method, PM2.5: Particulate matter with an aerodynamic diameter of two and one half microns or less, as measured by an EPA-approved reference method, SO2: Sulfur Dioxide, NOx: Nitrogen Oxides, VOCs: Photochemically reactive volatile organic compounds, CO: Carbon Monoxide, Lead (Pb), "Green house gases" - Carbon Dioxide, Methane, Nitrous Oxide, Sulphur Hexafluoride, Hydrofluoro Carbons (HFC), Perfluoro Carbons (PFC).

* Collection of Greenhouse Gas (GHG) Emissions Data - Starting on July 2, 2007, construction permit applications must include potential greenhouse gas emissions for the project. Applications received without this information will be considered incomplete and the permit(s) cannot be issued until the information has been received. The following are the GHG emissions that must be accounted:

CO_2: Carbon dioxide.
CH_4: Methane.
N_2O: Nitrous oxide. Also known as dinitrogen oxide or dinitrogen monoxide or laughing gas.
SF_6: Sulfur hexafluoride.
HFC: Hydrofluorocarbons: SEE TABLE A: COMMON GREENHOUSE GASES
PFC: Perfluorocarbons: SEE TABLE A: COMMON GREENHOUSE GASES
.

6. Fill in the sum for each pollutant for all emission points (stacks or vents).
7. Fugitive emissions are those emissions which cannot reasonably be made to pass through a stack or vent or equivalent opening. In so me cases, fugitive emissions must be included with a permit application. Fugitive emissions must be included if your facility is one of the 28 named source categories found in PSD rules in 40CFR 52.521; if your facility is subject to a NSPS standards as of August 7, 1980; if your facility is subject to a NESHAP standard as of August 7, 1980; or if your facility has been determined to be major for PSD, fugitive emissions, to the extend quantifiable, must be included in subsequent applications. Examples of fugitive emissions include coal piles, and unpaved roads. <u>If your facility is not subject to one of these categories, you do not need to list fugitive emissions</u>. For each source of fugitive emissions, assign a number to identify the source. This can be nay number, as long as it is difference from the emission point (stack or vent) numbers and consistent with the numbers submitted in other permit applications, such as Title V (if your facility submitted a Title V application). The number should also be consistent with other construction permit applications, and be consistent within this application. If you have more fugitive emission sources than can fit on this form, attach a list to the form. Briefly describe the source, and provide the permit number if it has one. Fill the rate of potential to emit in tons per year for each pollutant.
8. Fill in the sum of all fugitive emissions for each pollutant.
9. Fill in the sum of the total plant emissions for each pollutant, including emission points and fugitive sources.

AQD - Construction Permit Application

Facility Plot Plan & Modeling Information (MI-PP)

Instructions:
A scaled plot plan of the entire plant is required. Attach the plot plan, labeled as "MI" with your permit application.
The plot plan must:

1. Show a scale bar and a north arrow. The scale must be of sufficient size to allow drawings to be converted to electronic format. Simply stating that “1 inch = 80 feet” is not acceptable because the scale changes when the document’s size changes.
2. Show property lines.
3. Show fence lines or physical barriers, if any, precluding the public access.
4. Show locations of all buildings within property lines; all buildings within 200 feet outside property lines if their estimated height or width is at least 40 feet; locations of tiers on multi-level buildings.
5. Indicate the peak height of all buildings, tiers, and structures. A description of the buildings or structures is optional.
6. Show locations of ***all*** emission points. Emission point symbols need not be to scale. All emission points must be marked with identification numbers. The numbers ***MUST*** be consistent with all forms in the application. The identification numbers and associated emission points must be legible (photocopied plot plans may blur small print).
7. Show locations of all structures above ground level and within property lines. Structures above ground level such as a gasoline storage tank, grain storage silos, etc., must be shown. Structures at ground level, such as concrete pads, paved parking lots, etc., should not be on the plot plan. Open structures above ground level, such as power sub-stations, need not be included.
8. Highlight or mark the emission points that are the subject of this permit application so they are clearly distinguished on the plot plan.*
9. For PSD projects, show locations of fugitive sources such as haul roads and storage piles. Draw to scale or indicate their dimensions.

Note: 1. AutoCAD or equivalent computer-aid drawings on disk or on paper are preferred.
2. Sketches are acceptable if they are clearly drawn. If sketches cannot be made to scale, provide lengths of all sides of structures and their respective distances to all property lines.
3. Aerial photographs are not acceptable.

Example Plot Plan:

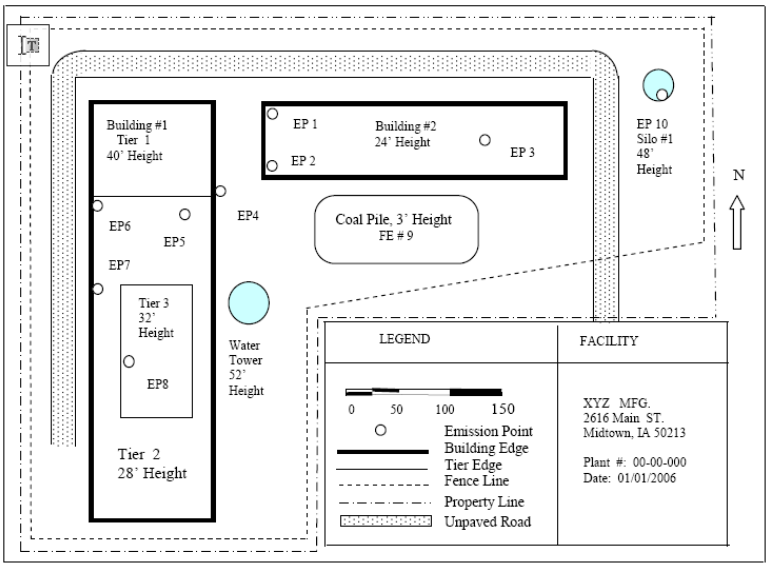

TABLE A: COMMON GREENHOUSE GASES

GAS	CHEMICAL FORMULA
Carbon dioxide	CO_2
Methane	CH_4
Nitrous Oxide	N_2O
Sulfur hexafluoride	SF_6
Hydrofluorocarbons:	
HFC-23	CHF_3
HFC-32 HFC-41	CH_2F_2 CH_3F
HFC-125 HFC-134	CHF_2CF_3 CHF_2CHF_2
HFC-134a HFC-143	CH_2FCF_3 CHF_2CH_2F
HFC-143a HFC-152	CH_3CF_3 CH_2FCH_2F
HFC-152a HFC-161	CH_3CHF_2 CH_3CH_2F
HFC-227ea HFC-236cb HFC-236ea	CF_3CHFCF_3 $CH_2FCF_2CF_3$ CHF_2CHFCF_3
HFC-236fa HFC-245ca	$CF_3CH_2CF_3$ $CH_2FCF_2CHF_2$
HFC-245fa HFC-265mfc	$CHF_2CH_2CF_3$ $CF_3CH_2CF_2CH_3$
HFC-365mfc	$CH_3CF_2CH_2CF_3$
HFC-43-10mee	$CF_3CHFCHFCF_2CF_3$
Perfluorocarbons:	
Perfluoromethane (PFC-14)	CF_4
Perfluoroethane (PFC-116)	C_2F_6
Perfluoropropane (PFC-218)	C_3F_8
Perfluorobutane (PFC-3-1-10)	C_4F_{10}
Perfluorocyclobutane (PFC-318)	c-C_4F_8
Perfluoropentane (PFC-4-1-12) Nitrogen Trifluoride	C_5F_{12} NF_3
Perfluorohexane (PFC-5-1-14) (PFC-9-1-18) Trifluoromethyl Sulphur Pentafluoride	C_6F_{14} $C_{10}F_{18}$ SF_5CF_3

* Senate File 485 defines a greenhouse gas as being carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

* This is not an all inclusive list and will be updated periodically.

* The chemical formulas were obtained from the Intergovernmental Panel on Climate Change (IPCC) Working Group 1: The Physical Basis of Climate Change, Section 2: Changes in Atmospheric Constituents and Radiactive Forcing
The link is as follows: http://ipcc-wg1.ucar.edu/wg1/wg1-report.html (page 84 of 106).

Supplemental forms in support of a construction permit application:

Instructions: Supplemental forms B & E are used by the reviewer to become familiar with the emission unit. Completion of Form M is intended to assist applicants in determining whether or not point source emissions associated with non-PSD construction permit projects will require an air dispersion modeling analysis. Modeling requirements for non-point source emissions will be determined on a case-by-case basis. This procedure is used for both new construction permit projects and for modifications to previous projects.

Boiler Form (Form-B)
Engine Form (Form-E)
Modeling Determination (Form-M)

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Supplemental Information in support of a Construction Permit Application
Boiler Form (Form-B)

Boiler Description	
Emission Point (EP) #	
Emission Unit (EU) #	
Engine Manufacturer	
Model #	
Model Year	
Fuel Type	
Rated Capacity (MMBtu/hr)	
Boiler Subcategory [1]	
Commence Construction Date	
Reconstruction Date [2]	
Control Equipment Description	

[1] The subcategories of boilers and process heaters, as defined in § 63.7575 are:

(a) Pulverized coal/solid fossil fuel units.
(b) Stokers designed to burn coal/solid fossil fuel.
(c) Fluidized bed units designed to burn coal/solid fossil fuel.
(d) Stokers designed to burn biomass/bio-based solid.
(e) Fluidized bed units designed to burn biomass/bio-based solid.
(f) Suspension burners/Dutch Ovens designed to burn biomass/bio-based solid.
(g) Fuel Cells designed to burn biomass/bio-based solid.
(h) Hybrid suspension/grate burners designed to burn biomass/bio-based solid.
(i) Units designed to burn solid fuel.
(j) Units designed to burn liquid fuel.
(k) Units designed to burn liquid fuel in non-continental States or territories.
(l) Units designed to burn natural gas, refinery gas or other gas 1 fuels.
(m) Units designed to burn gas 2 (other) gases.
(n) Metal process furnaces.
(o) Limited-use boilers and process heaters.

[2] A modification is a physical or operational change that can increase the emissions of a regulated air pollutant. Reconstruction is replacing the components of an existing engine and the cost of the replacement components exceeds 50% of the cost of a new engine. See 40 CFR 60.14 and 60.15 for complete definitions.

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Supplemental Information in support of a Construction Permit Application
Engine Form (Form-E)

Emission Point (EP) #		Ignition Type	☐Spark ☐Compression
Emission Unit (EU) #		Black Start?	☐Yes ☐No
Engine Manufacturer		Emergency Engine? [2]	☐Yes ☐No
Model #		2 or 4 Stroke? (SI Engine Only)	☐2-Stroke ☐4-Stroke
Model Year		Rich or Lean Burn? (SI Engine Only)	☐Rich Burn ☐Lean Burn
Fuel Type		Portable? [3]	☐Yes ☐No
Rated Capacity (bhp)		Manufacturer Certified?	☐Yes ☐No
Displacement CI Only (liters/cylinder)		Modification/Reconstruction Date [4]	
Date of Construction[1]			

[1] Date the engine was ordered.

[2] Emergency stationary internal combustion engine is a stationary ICE whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary ICE used to produce poser for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary Ice used to pump water in the case of fire or flood, etc. Stationary SI ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines.

[3] A portable engine that will remain at allocation more than 12 months or a portable engine that operates more than 3 months per year as part of a seasonal source that returns to the same location is considered a stationary engine.

[4] A modification is a physical or operational change that can increase the emissions of a regulated air pollutant. Reconstruction is replacing the components of an existing engine and the cost of the replacement components exceeds 50% of the cost of the new engine. See 40 CFR 60.14 and 60.15 for a complete definition.

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Supplemental Information in support of a Construction Permit Application

NON-PSD MODELING DETERMINATION (FORM –M)

Company Name:	Office Use: AIRS#: _____ Permit#:_____ Energov#_____

DISPERSION MODELING DETERMINATION

Completion of Form M is intended to assist applicants in determining whether or not point source emissions associated with non-PSD construction permit projects will require an air dispersion modeling analysis. Modeling requirements for non-point source emissions will be determined on a case-by-case basis. This procedure is used for both new construction permit projects and for modifications to previous projects.

This form reflects the Polk County Air Quality Division's (AQD) Air Dispersion Modeling Applicability Procedure for Non-PSD construction permit applications. Please check the appropriate box below depending on whether the flow chart indicates that dispersion modeling is required or not.

Note: ALL projects must include a site plan; see section "**PLOT PLAN REQUIREMENTS**" for instructions. A scaled plot plan of the entire plant is required. Attach the plot plan, labeled as "MI-PP", with your permit application.

Note: Form M only applies to point source emissions and should not be applied to internally venting volume sources. Internally vented sources will be addressed on a case-by-case basis.

☐ DISPERSION MODELING ANALYSIS IS NOT REQUIRED

Since the point source emissions in this application meet the criteria currently listed in the Air Dispersion Modeling Applicability Procedure, it is likely that modeling is not required.

There are unique circumstances that the Air Dispersion Modeling Applicability Procedure does not address that may trigger a modeling review. Recommendations for modeling reviews that fall outside of the Air Dispersion Modeling Applicability Procedure will be reviewed by Polk County AQD management.

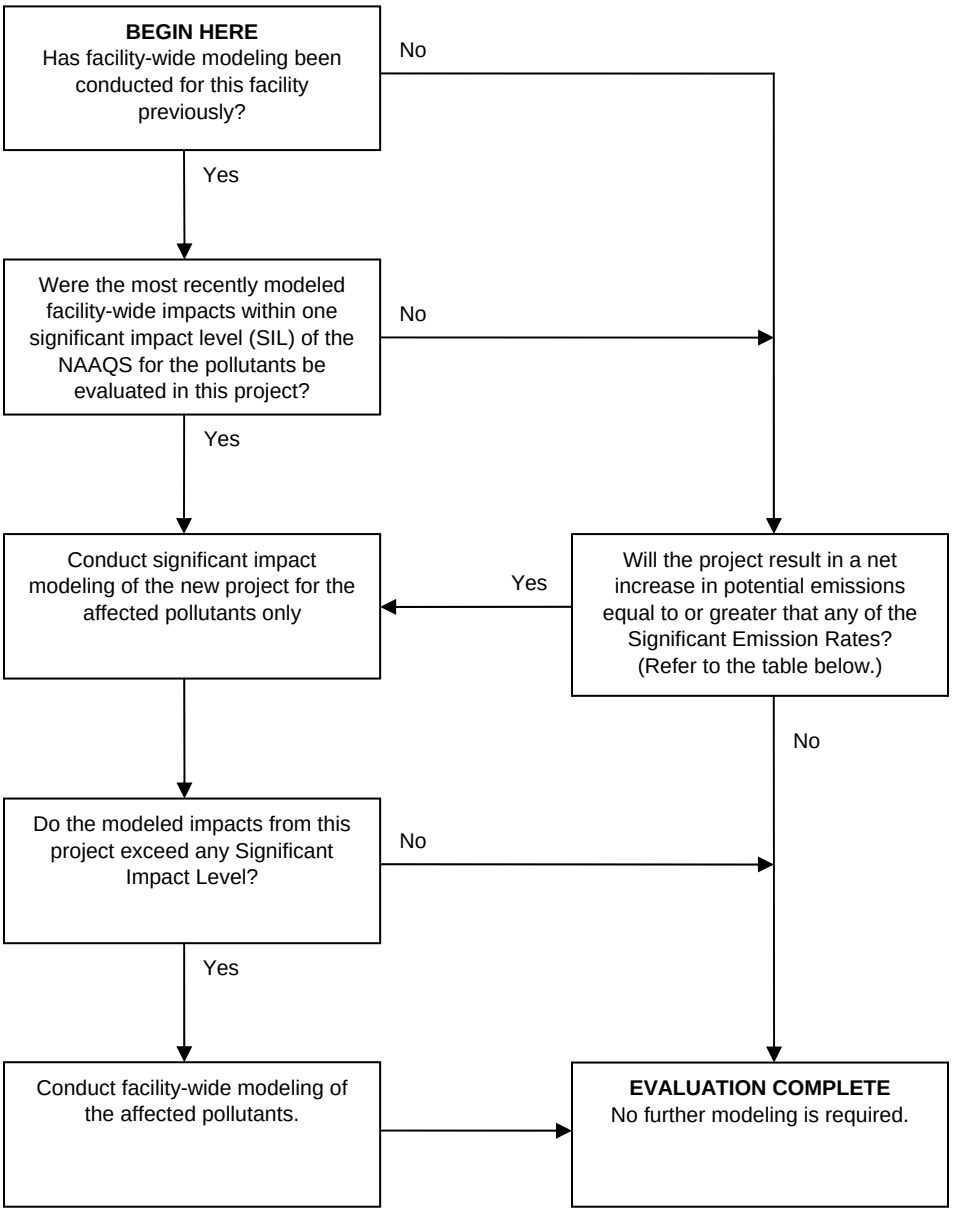
☐ DISPERSION MODELING ANALYSIS IS REQUIRED

When dispersion modeling is required, the modeling analysis is either conducted by the Polk County AQD or is submitted by the applicant for Polk County AQD review as noted below:

- All applicants have the option to prepare and submit a complete dispersion modeling analysis, subject to review by the Polk County AQD.
- For major sources that have previously been modeled, the Polk County AQD will conduct the modeling analysis if resources allow. Applicants with extensive changes to their facility may expedite the modeling review by submitting their own modeling analysis.
- For major sources that have not previously been modeled, the applicant must prepare and submit the dispersion modeling analysis.

For non-major sources (minor), the Polk County AQD will conduct the initial dispersion modeling as a service to minor sources when a modeling analysis has not been submitted by the applicant.

NON-PSD MODELING DETERMINATION (FORM –M) Continued:



Pollutant	Significant Emission Rate	National Ambient Air Quality Standard ($\mu g/m^3$)					Significant Impact Level (SIL) ($\mu g/m^3$)				
		1-hour	3-hour	8-hour	24-hour	Annual	1-hour	3-hour	8-hour	24-hour	Annual
PM10	3.42 lb/hr				150					5	
$PM_{2.5}$	2.28 lb/hr				35	15				1.2	0.3
NO_2	9.13 lb/hr	188				100	7.5				1
SO_2*	9.13 lb/hr	196	1,300		365	80	7.9	25		5	1
CO	22.8 lb/hr	40,000		10,000			2,000		500		

* For 1-hour SO_2: no dispersion modeling is currently required for minor projects. Ambient air impact evaluation will be required in the future State Implementation Plan revision.