Construction Permit Application
Polk County Public Works - Air Quality Division

- *Instructions that will assist in the completion of the permit application start on page 7.*

(1) Company Name
Legal Name:

(2) **Responsible Official (RO) Certification (**RO- As defined in Board of Health Rules -Chapter V)	
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 (RO) Signature (required):**_____**Date:**_____ Print Name:_____ Title:_____	**For Office Use Only:** Date Received_____ Construction Permit#_____ Energov# _____ Facility (AIRS#)_____ Permit Fee $_____ Check# _____ Issue Date_____

(3) Responsible Official (RO) – Invoicing and Mailing Information (required)			
RO Name:		RO Title:	
RO Telephone #:		RO Email:	
Mailing Address (Street):	City:	State:	Zip:

(4) Equipment Location and Facility Contact (The physical location of the emission unit (EU) included in this application.)			
Facility Contact Name:	Facility Contact Title:	Telephone#:	Email:
Street Address:	City:	State: IA County: Polk	Zip
Is the Equipment Portable? ☐ Yes, other Location(s): ☐ No			

(5) Permit Preparer or Consultant Information			
Name:	Title:	Iowa P.E. Registration # (not required):	
Company Name:		Telephone#:	Email:
Street Address:	City:	State:	Zip:

(6) Permit Application Type -
Identification of New Source Performance Standards (NSPS) or National Emission Standards for Hazardous Air Pollutants (NESHAP)

☐ New construction
☐ Modification of an existing permitted source, provide previous construction permit#(s): _____
☐ Other, provide and explanation:

NSPS & NESHAP Applicability

NSPS - Is any emission unit in this application subject to a 40 CFR Part 60 NSPS?
☐ Yes, List all applicable (NSPS) for each emission unit included in this application:_____
☐ No

NESHAP - Is any emission unit in this application subject to a 40 CFR Part 61 or Part 63 NESHAP?
☐ Yes, List all applicable (NESHAP) for each emission unit included in this application:_____
☐ No

(7) Principal Activity or Product

Briefly describe the activity of your business and its principal product(s):

(8) North American Industry Classification System (NAICS) and Standard Industrial Classification (SIC) Information

Primary NAICS:_____ http://www.census.gov/eos/www/naics/

Primary SIC:_____ https://osha.gov/pls/imis/sicsearch.html

(9) Permit Application Fees and Source Type

☐ Major (Filing and Review Fee =$1650)

☐ Minor (Filing and Review Fee = $358*)
*6% of the actual cost of the new control equipment excluding installation costs, whichever is greater. Not to exceed $6,700. Attach documentation of control equipment cost.

☐ Government/Tax Exempt (Filing and Review Fee = $100)

$Amount enclosed:_____

Construction Permit Checklist - Before submitting the construction permit application make sure to include the following items:

☐ A completed application packet. All applicable sections have been completed.

☐ Signature of the RO.

☐ Applicable permit fees.

Emission Unit (EU) Information

(One page per EU)

(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) Standard Classification Code (if known):	

Is Control Equipment Associated with EU?

☐ **Yes**

☐ **No**

(9) Control Equipment (CE) Name (if any):

(10) Control Equipment Identification # (if any):

(11) Permit Limits

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: _____

*An estimate of actual is required on Page 5, section 6.

Rationale for requesting the limit(s):

(12) Product or Material Flow Chart

Provide a description and 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.

Control Equipment (CE) and Stack/Vent Information

(1) Company Name
Legal Name:

Control Equipment (CE) Description and Specifications
(1) Control Equipment (CE) Name and Description:_____ ☐ Not Applicable If applicable check one. ☐ Condensers ☐ Adsorbers ☐ Dry Filters ☐ Catalytic or Thermal ☐ OxidationCyclones/SettlingChambers ☐ 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) and Stack Test Supporting Documentation
(1) Control efficiency supporting document attached: ☐Manufacturer's design specifications and performance data/guarantee ☐Stack test report
Pollutant(s)Controlled:
Control Efficiency %:_____ Provide Manufacturers performance data or certification.
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 or 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:	☐ Vertical, with obstructing rain cap ☐ Vertical, with un-obstructing rain cap or without rain cap ☐ Downward discharge ☐ Horizontal discharge ☐ Other, please specify_____	

Exhaust Information		
17) Rated Flow Rate:_____☐acfm ☐ scfm	(18) Moisture Content % (if known):	(19) Exit Temperature (degrees F):

AQD - Construction Permit Application
Summary of Emissions by Emission Point (EP)

(1) Company Name

Legal Name:

(2) Emission Point (EP) (Stack/Vent) Number(s):

(3) Process Flow Diagram

Summary of emissions from the Emission Point (EP) included in this application

(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):_____		PM	PM10	PM2.5	SO2	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):_____		PM	PM10	PM2.5	SO2	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														

AQD - Construction Permit Application

Summary of Facility Emissions/Inventory-(**FACIILTY-WIDE**)

(1) Company Name																		
Legal Name:																		
EU/EP Emissions Summaries																		
(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 applicable															
(8) Total Fugitive Emissions																		
(9) Total Facility Emissions																		

Provide a Facility Plot Plan (MI-PP)

(1) Company Name
Legal Name:
Is the plot plan included? ☐ Yes ☐ No, provide an explanation why the plot plan was not included.

Instructions for including the plot plan is necessary for construction permit processing and air dispersion modeling.

A scaled plot plan of the entire plant is required. Attach the plot plan, labeled as "MI-PP" 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:

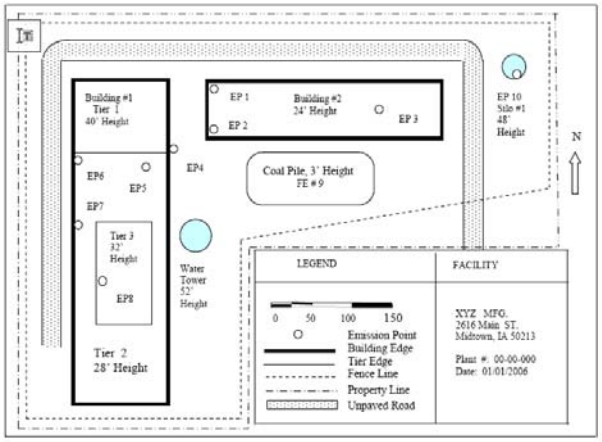


TABLE A: COMMON GREENHOUSE GASES

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)

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.

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.

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.

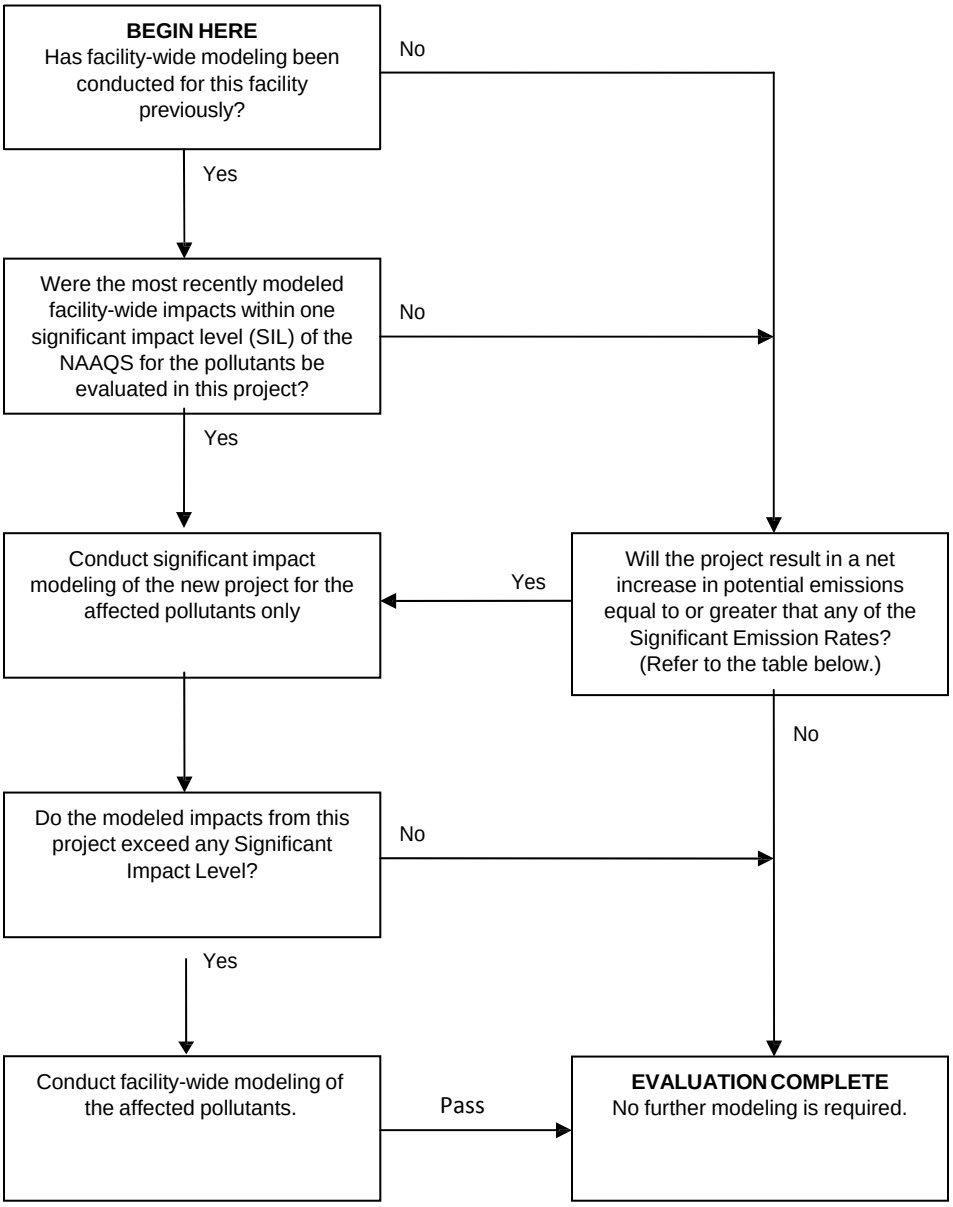
☐ DISPERSION MODELING ANALYSIS IS REQUIRED

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.