

Source Parameters

Instructions for Form M-2

Form M-2 should be completed for each facility when a toxics review is required. A toxics review may be required due to a permit application, MACT applicability determination, or call by the Director.

POINT SOURCE PARAMETERS:

- **Stack Height - AGL** – This is the height of each emission point above ground level. Provide the units of measurement (feet or meters).
 - **Stack Temperature** - This is the *minimum* temperature of the discharge from the stack.
Screening Models - Use 298.15 °K for discharges at ambient temperature (77°F as specified in MCAPCO Regulation 2.1104).

AERMOD - Use 0° K for discharges at ambient temperature. AERMOD will apply the hourly ambient temperature to the stack parameter if absolute zero is entered.
 - **Stack Velocity** - This is the exit velocity of the discharge from the stack. An exit velocity of 0.01 m/s is entered if the stack is horizontal, or if it has a raincap.
 - **Stack Flow Rate** - This is the volumetric exit discharge from the stack. A flowrate is required for facilities using a screening model to evaluate toxics.
 - **Stack Diameter** - This is the cross sectional area of stack reduced to a diameter. For a non-circular stack, the diameter can be determined using the following equation: $\sqrt{4 \times (\text{cross sectional area}) / \pi}$
 - **Source Base Elevation** – List the elevation, above mean sea level, of the stack (in feet).
 - **Stack UTM Coordinates** – Provide either the UTM coordinates (in meters) or latitude and longitude (in degrees) for each stack. Indicate what type of terrain data was used in the model (NAD23, NAD83, or NED).
 - **Rain Cap** - This is a **Yes** or **No** question.
 - **Vertical Stack** - This is the direction of the stack (vertical stacks point toward the sky). **Yes** or **No** question
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AREA SOURCE PARAMETERS:

- **Area Source Height** - This is the height of each emission point above ground level. Provide the units of measurement (feet or meters).
 - **Area Source Width** - This is the minimum distance of which the area source consists.
 - **Area Source Length** - This is the maximum distance of which the area source consists.
 - **Source Base Elevation** – List the elevation, above mean sea level, of the area source (in feet).
 - **Stack UTM Coordinates** – Provide either the UTM coordinates (in meters) or latitude and longitude (in degrees) for each area source. Indicate what type of terrain data was used in the model (NAD23, NAD83, or NED).
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VOULME SOURCE PARAMETERS:

- **Volume Source Height** - This is the height of each emission point above ground level. Provide the units of measurement (feet or meters).
 - **Volume Source Width** - This is the minimum distance of the building of which the volume source consists (sigma Y).
 - **Volume Source Length** - This is the maximum distance of the building of which the volume source consists (sigma Z).
 - **Source Base Elevation** – List the elevation, above mean sea level, of the volume source (in feet).
 - **Stack UTM Coordinates** – Provide either the UTM coordinates (in meters) or latitude and longitude (in degrees) for each volume Source. Indicate what type of terrain data was used in the model (NAD23, NAD83, or NED).
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SECTION M Source Parameters

Point Source	Stack Data				
Emission Point ID					
Stack Description					
Stack Height (ft or m) - AGL					
Stack Temperature (°F or °K)					
Stack Exit Velocity (ft/s or m/s)					
Stack Flowrate (acfm or m ³ /s)					
Stack Diameter (ft or m)					
Stack Base Elevation (ft) - MSL					
Stack UTM Coordinates (m):	E				
	N				
Circle Datum: NAD27, NAD83, or WGS84	Zone				
OR					
Latitude	° N				
Longitude	° W				
Rain Cap? (Y/N)					
Vertical Stack? (Y/N)					

Area Source	Area Source Data				
Emission Point ID					
Source Description					
Area Source Height (ft or m) - AGL					
Area Source Length (ft or m)					
Area Source Width (ft or m)					
Stack Base Elevation (ft) - MSL					
Area Source UTM Coordinates (m):	E				
	N				
Circle Datum: NAD27, NAD83, or WGS84	Zone				
OR					
Latitude	° N				
Longitude	° W				

Volume Source	Volume Source Data				
Emission Point ID					
Source Description					
Volume Source Height (ft or m) - AGL					
Volume Source Length (ft or m)					
Volume Source Bldg. Height (ft or m)					
Stack Base Elevation (ft) - MSL					
Volume Source UTM Coordinates (m):	E				
	N				
Circle Datum: NAD27, NAD83, or WGS84	Zone				
OR					
Latitude	° N				
Longitude	° W				

ft - feet	AGL – Above Ground Level	m/s – meters per second	K° = 273+(°F-32) x 5/9)
m - meters	UTM – Universal Transverse Mercator	MSL – Mean Sea Level	acfm – actual cubic feet per minute



SECTION M Source Parameters

Line Source	Line Source Data				
Emission Point ID					
Source Description					
Release Height (ft or m) - AGL					
X Length (ft or m)					
Y Length (ft or m)					
Angle					
Initial Vertical Dimension					
Stack Base Elevation (ft) - MSL					
Line Source UTM Coordinates (m):	E				
	N				
Circle Datum: NAD27, NAD83, or WGS84	Zone				
<u>OR</u>					
Latitude	° N				
Longitude	° W				
ft - feet	AGL – Above Ground Level	m/s – meters per second	K° = 273+((°F-32) x 5/9)		
m - meters	UTM – Universal Transverse Mercator	MSL – Mean Sea Level	acfm – actual cubic feet per minute		