



## User Guide for DICE HRA Screenings

### Using our District's DICE Screening Tool

- 1) Before getting started, make sure you have the following information:
  - Engine size
  - Engine location
  - Dimensions and locations of nearby buildings
  - PM emission factor
  - Maximum annual usage for maintenance & testing
  
- 2) Open Google Earth and locate the engine:
  - Determine the appropriate meteorological data set for the engine location. Typically, though not always, this corresponds to the meteorological site in closest physical proximity to the engine. Meteorological data files, including wind roses, and a map of the site locations can be found on the District's webpage here: <https://www.ourair.org/metdata/>. Contact the District if you are unsure of which meteorological data set to select.
  - Draw a circle with a radius of 3 km centered on the diesel engine using the *Circle* tab on the ruler tool in Google Earth. Determine if the area within the circle is primarily urban or rural.
    - Industrial, commercial, dense single/multi-family, and multi-family two-story land use types are considered to be urban.
    - Large estates, residences with large grass lawns, parks, golf courses, agricultural areas, undeveloped land, and water surfaces are considered to be rural.

Additional information on determining the urban or rural condition is found in Section 3.2 of the District's [Form-15i](#).

  - Use Google Earth's ruler tool to determine the distance to the nearest resident and to the nearest worker<sup>1</sup>.
    - The resident should be located at the nearest point of the nearest house, apartment building, college/boarding school dorm, K-12 school, daycare or care facility, or hospital.
    - The worker should be located at the nearest point of the nearest commercial building or outdoor area where a worker could be located on a daily basis (i.e., an agricultural field, golf course, park, etc.).

---

<sup>1</sup> Typically this refers to the nearest offsite worker. However, this could be an onsite receptor where a person works if they are not employed by or monetarily tied to the facility being evaluated (e.g. agricultural workers on a field within an oil lease, employees of restaurants located on a military base, etc.). See Section 3.9.8 of the District's Form-15i for additional information: <https://www.ourair.org/wp-content/uploads/apcd-15i.pdf>.



3) How to use the DICE Screening Tool:

- Open the spreadsheet, located here: <https://www.ourair.org/wp-content/uploads/DICE-Screening-Tool.xlsx>. The purple boxes in the “UI” (User Interface) tab are the only cells that must be edited to perform the DICE HRA screening. All other cells in all tabs are locked and contain data that was used to create the spreadsheet tool; they should *not* be edited.



## Santa Barbara County Air Pollution Control District DICE Screening Tool — January 2026

Engine Data User Inputs		air pollution control district SANTA BARBARA COUNTY
<b>Meteorological Data Set</b>		
<input checked="" type="radio"/> Lompoc H Street <input type="radio"/> Santa Barbara National Guard <input type="radio"/> Santa Barbara Airport <input type="radio"/> Santa Maria Airport <input type="radio"/> Santa Ynez Airport <input type="radio"/> Vandenberg Airport		
<b>Dispersion</b>	<b>Engine Rating:</b>	500 bhp
<input checked="" type="radio"/> Rural <input type="radio"/> Urban	<b>DPM Emission Factor:</b>	0.15 g/bhp-hr
<b>Building Downwash</b>	<b>Permitted Hours:</b>	50 hr/yr
<input checked="" type="radio"/> No Building Downwash <input type="radio"/> Include Building Downwash	<b>Distance from Source:</b>	
	<i>Nearest Resident:</i>	50 meters
	<i>Nearest Worker:</i>	20 meters

DICE Screening Health Risk Outputs	SBCAPCD Board-Approved Significance Thresholds
Cancer Risk at the MEIR:	2.7 / million
Chronic HI at the MEIW:	<0.1
	≥10.0 / million
	>1.0

HI stands for "hazard index."

MEIR stands for "maximally exposed individual resident."

MEIW stands for "maximally exposed individual worker."

- Enter the engine data into the appropriate purple cells:
  - Select the meteorological data set based on your determination from Google Earth.
  - Select urban or rural dispersion based on your determination from Google Earth.
  - Building downwash effects should be included if there is a sufficiently large building near the engine. *If you are unsure, include building downwash.* Building downwash effects can be excluded only if the following is true:

$$D \geq 5L$$

where:  $D$  = shortest distance from the exhaust stack to the building

$L$  = lesser of the following two values:

building height and projected building width (PBW)

PBW = maximum cross – sectional length of the building;

for rectangular buildings,  $PBW = \sqrt{(\text{length}^2 + \text{width}^2)}$

- Enter the size of the engine in units of brake horsepower.
  - The diesel PM emission factor is equal to the PM emission factor for the engine.
  - Enter the maximum annual permitted usage of the engine, *for non-emergency purposes only*. This value is usually 50 hours per year for new engines in Santa Barbara County.
  - Enter the distance from the engine to the nearest resident and to the nearest worker in meters.
- 4) How to interpret the results:
- Our District’s Board-approved significance thresholds for cancer risk and chronic non-cancer risk are shown in the green cells.
  - The resulting screening health risk values will be shown in the blue cells.
  - If the screening health risk values are below the significance thresholds, the engine has passed the HRA screening.
  - If any of the values are above the significance thresholds, contact the District.