

HARP Tips to Remember

This is a collection of important tips and warnings that will aid you in using the HARP Software.

HARP Software

1. **The most important thing to NEVER EVER EVER Forget...**
NEVER EVER EVER put spaces in your file names!!!!!!!
2. The HARP software is made up of 3 modules: the Emission Inventory Module, the Dispersion Module, and the Risk Assessment Module.

Data flows only in one direction between these modules. The data that is entered in the Emission Module is transferred to the Dispersion Module. The data that is in the Dispersion Module is transferred the Risk Module. No data is ever copied from the Dispersion or Risk modules into the Emissions database.

Emissions Inventory Module

1. **Don't Forget that...** whenever you are adding a new facility, a new device, etc. ALWAYS click "ADD" first.
2. **Don't Forget that...** The yellow cells in the emission inventory module indicate that this data field is required if you are going to perform a risk assessment.
3. Facility Data Window
 - a. **Tip...** Page 5: the information in the "Risk Assessment" box on the right side of the page must be filled-in by the user. This information is not automatically filled-in by the computer.
 - b. **Tip...** You can see a summary of the annual total emissions for a facility by clicking on *Calculate/Total Emissions*. This is helpful in checking your data entry skills.
4. Release Point (Stack) Window
 - a. **Tip...** For volume and area sources, the height is divided by the appropriate factor (e.g., 2.15) to obtain the vertical dimension (SZINIT) before input into HARP. The volume source also requires an adjustment to the width to obtain a lateral dimension (SYINIT). To obtain the SYINIT for HARP, the width is divided by a factor (e.g., 4.3). For more information see section 5.10 of the *HARP User Manual*.
5. Device Window
 - a. When you are entering data for risk assessment purposes only (not for emission inventory reporting), you just need to create a device and name it. No additional data is needed for risk assessment evaluation.

6. Process Data Window

- a. **Don't Forget to...** tie your process to your stack. On the Process Window there is a yellow entry for "stack number". Make sure you enter a stack number here. If you don't, the emissions will not be released in the dispersion model.
- b. **Tip...** the program requires that a SIC and SCC be entered into the process window. If you are entering data for risk assessment purposes only, you can enter an SIC and SCC of "unknown" which is all 9's.

7. Emission Window

- a. **Tip...** The HARP database contains all of the substances listed in the Hot Spots Regulation. However, not all of these substances have health values (cancer, chronic, acute). Therefore if you plan on performing a risk analysis, make sure you have chosen a substance with a health value. If you choose a substance without a listed health value, you will get a risk of zero. The HARP health table can be viewed from the Risk Analysis module (Analysis/Risk Analysis/Health Table).
- b. **Tip...** Pollutant IDs are unique to each substance, except for carbon monoxide and crystalline silica.
 - i. Carbon monoxide is listed as 42101 (SAROAD for criteria pollutant) and 630080 (CAS number for toxics). You should always select 42101 when entering emissions for carbon monoxide unless you want to perform risk analysis for a facility using carbon monoxide. In this case select 630080 as carbon monoxide.
 - ii. The chronic REL for crystalline silica has been added under the Hot Spots Emittent ID number 1175 and CAS number 7631-86-9. When adding new emissions to CEIDARS, please use CAS number 7631-86-9. The Hot Spots ID will eventually be deleted.
- c. **Tip...** The HARP database contains all of the substances listed in the Hot Spots Regulation. In addition, the HARP database contains all health factors listed in the OEHHA Risk Assessment Guidance Manuals (even if the substance is not listed in the EICG document).

Here is the catch; since this software was designed specifically for the Hot Spots Program, when you add a substance to the Emission Inventory window only the substances that are officially listed in the Hot Spots Regulation are displayed. Substances not currently listed in the Hot Spots regulation but have OEHHA health values are not displayed in the list of substances to choose from.

If you are doing a risk assessment for a facility that is emitting a substance that OEHHA has developed a health value for, but is not on the Hot Spots list, you can still add it to your facility. If you know the substance CAS number, type it directly into the Add Chemicals window.

To view the HARP health table, go into the Risk Module. Click on “View Health Table” from the top of the window. Any substance name that is written in CAPITAL letters is a substance that is not currently in the Hot Spots regulations. An example is hydrogen selenide (CAS # 7783-07-5).
Geometry Window

- d. **Tip...** the coordinates for the corners of the buildings and properties must be entered in “relative coordinates” not actual UTM coordinates.
- e. To add a new facility click “add” first, enter the ID number and the number of corners. Then add the name of the building, height and elevation information. Then to add the corners of the buildings, click on “edit points.”

Dispersion Module

1. **Warning...** It is really easy to push buttons and get an answer. But to understand the answer you need to understand the ISCST3 air dispersion model.
2. **Don't Forget that...** The data that is copied into the Dispersion module is only a snapshot of the data in the Emission Inventory database. So if you make changes to a facility in the database after that facility was copied into the Dispersion module, you will need to delete the facilities from the Sources tab and enter them again. This way your changes will be seen by the Dispersion model.
3. **Tip...** As you edit the data in the various Tabs remember to SAVE often.
4. **Tip...** One DEM file may not cover your entire grid. So it may be necessary to open one or more DEM files.
5. ISC Files Tab
 - a. **Don't Forget that...** You must enter a UTM zone in the field entitled “Convert all UTM's to Zone.” If you do not enter a number in this field you will get relative coordinates instead of actual coordinates. In the risk module there will be no coordinates for your stacks, and the software will be unable to create a map.
 - b. **Tip...** If you leave the “Title 1” and “Title 2” fields blank, you will get a warning message in the ISC output file. Otherwise, the model runs fine.
6. Sources Tab
 - a. **Don't Forget that...** every source and receptor needs to have a UTM zone entered in the UTM zone column.
7. Emission Rates Tab
 - a. **Remember...** This tab is needed to vary the emission rate over time (e.g., over a 24-hour period). For example, if your facility emits during a 16 hour work day, then you will want to use the HROFDY emission scalar so that dispersion is only for those working hours.

- b. **Tip...** The emission rate factors need to add up to 24 for the HROFDY scalar. Remember that the emissions are entered for maximum hourly and annual inventory in the emissions module. For long term calculations, HARP will distribute these hourly over a year. In order to conserve mass, the emission rate factors need to add to 24. HARP will ask you if you want to adjust these factors automatically. We recommend “yes.”
8. Dispersion Output
- a. **Tip...** There is a Y2K warning that will appear after every run of ISCST3 in HARP. This warning looks like this:

***** WARNING MESSAGES *****

ME W360 1033 SET_WI:2-Digit Year Specified: Valid for Range 1950-2049 SURFDATA

This warning occurs because the meteorology file contains years with only two digits. ISC resolves the ambiguity by interpreting this to mean the years are in the range of 1950 to 2049. In other words, 02 is interpreted as 2002, not 1902.

Risk Module

1. **Warning...** It is really easy to push buttons and get an answer. But to understand the answer you need to understand the OEHHA Risk Assessment Guidelines.
2. Main Risk Window
 - a. **DON'T PANIC...** if no GLC and X/Q values are displayed. The option to have them visually turned-off is activated. To speed up the loading of the SRC file and the subsequent calculations, HARP will automatically hide the X/Q and GLC values. When you want these values to be displayed, uncheck the menu item under **Options/Display GLC and X/Q Details**. When this item is checked, the GLC and X/Q values will be displayed immediately.
 - b. **Don't Forget that...** In the Risk Tab of the Data View Window, HARP will display the results of the last risk scenario that was calculated. So if you chose to run a risk analysis for “average, high-end and derived”, the risk values that will be displayed will be for “derived”. If you want to see all three analyses, you must view the risk report. If you ran the OEHHA standard report set, HARP will display the 70-year, cancer, derived (adjusted) scenario from Report #19.
 - c. **Don't Forget that...** In the Risk Tab of the Data View Window, HARP will display the total risk from the last scenario calculated. If you want to see the contribution from the individual pathways or pollutants, you must look at the risk report (which is saved in your project directory). The other way to see individual results is to do “what if” analyses under the emissions tab (see section 10.6.7 in the HARP User Manual).

3. Risk Reports Window/Step 4 in Step Through

- a. **Tip...** The Risk Reports Window has an “automatic file naming” option. By default, when you setup a risk calculation HARP will save the results in a file with a name that represents the analysis options you have chosen. If you later recalculate the same scenario, HARP will want to save the file with the same name and overwrite the first file. You can change the file name if you want to keep the first file. Changing the file name is very helpful if you are running many of the same or similar scenarios.

If you choose to turn off the automatic file naming, but on your next run you want to use the automatic file naming, you will need to check the automatic file naming box.

4. Contour Window

- a. **Don't Forget that...** The contour isopleths are generated by using only grid receptors.
- b. **Don't Forget that...** Three grid receptors are necessary to draw a contour line.
- c. **Don't Forget that...** HARP will plot the last risk that was calculated. So if you chose to run a risk analysis for “average, high-end and derived”, the risk contours that will be plotted will be for “derived”. If you ran the OEHHA standard report set, HARP will plot the 70-year, cancer, derived (adjusted) scenario from Report #19.
- d. **Don't Forget that...** HARP plots contours in units of “per million”.

5. Stochastic Window

- a. **Don't Forget that...** A stochastic analysis is for a single receptor not the entire grid. Therefore, you always need to run a point estimate analysis before you run a stochastic analysis. The point estimate analysis will help to determine which receptor to run in the stochastic analysis.

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