**Instructions for Using the ASPECT Google Earth n-link**

The attached KML n-link file is a collection of Google Earth KML scripts that permits full viewing and download of data associated with a given deployment or project. Once the n-link has been loaded on your computer, subsequent installs of the link are unnecessary for the duration of the project or deployment; as new data is added to the project, the n-link, when opened will show the new data in chronological order. Two software packages are necessary to run the n-link. You will need an installed copy of Google Earth and a current copy of your favorite internet browser (Internet Explorer, Chrome, or Firefox) your internet browser.

**How to use the attached KML file:**

1. Save the KML file to your desktop.
2. To open it, double click the n-link icon and it will bring up your Google Earth Program. As the program starts, Google Earth will move to the general area of interest associated with the project and display an EPA ASPECT aircraft ICON. The ASPECT icon acts as a product menu allowing access to a data associated with the project. Clicking the airplane icon will open up a balloon showing the relevant products that are available for this particular ASPECT project.
3. The ASPECT aircraft icon and all other data products are associated with data layers that will show up on the left side of the image. When the n-link is first started the Aircraft Icon will show up as the first layer under the “Temporary Places” pane. As additional products are opened, they will in turn be listed under the Temporary Places pan in the order that they were opened.

**Structure of the Aircraft Icon:**

Data products that are currently available for viewing and/or download will be displayed under the Aircraft icon balloon. The following are examples of typical data and products that are accessible by the Aircraft icon:

* A brief mission description.
* Sensor suite capabilities
* Chemical data products
* Color aerial photography
* Mosaic Aerial Photography (Optional)
* Oblique Photography
* Aircraft Video
* False color aerial infrared imagery
* Gamma Ray Information
* [Aircraft F10 flight tracks and data](http://www.epaaspect.net/googleearth/Harvey_Sept2017/aspect/kml/aircraft_locations_Harvey_Sept2017.kml)
* Weather station data (used for chemical plume modeling)

All of the products shown above represent mission specific data links that can be accessed using the Aircraft icon.   Simply clicking on any of these topics within the Aircraft Icon will activate that information link.  What happens next depends on what link you have activated.

The following are brief descriptions of how to use each link: (Note: Be patient. How fast things occur depends on the network (internet) speeds. Higher resolution image products may take several minutes to load).

**Sensor suite capabilities** – Clicking on the Sensor suite capabilities will open a brief technical description of what sensors are located on the ASPECT system and the products that these sensors generate. To close the description window, click the button located in the top left of the description window titled “<< Back to Google Earth”.

**Chemical data products** – Clicking the Chemical data products will open a set of chronological data layers that will be displayed under the Temporary Places directory. The most recent set of data will be active with the older data sets closed. To open the older data sets, click on the box next to the flight number (Flight number and data) and the data will be opened. Locations in which chemicals were detected will show up as bulls eye data points in the Google Earth image. If a given data pointed is selected by clicking on it, the following information will be displayed:

* Chemical compound name
* System scan number
* Compound detection limit (in ppm)
* Compound concentration (in ppm)

**Color aerial photography** – Orthorectified color aerial imagery is available by clicking on the Color aerial photography. As with the chemical data products, selecting this option will automatically load the most recent collection of photographic data locations into Google Earth. Loaded data will be represented on the image by a camera icon and a transparent outline of the respective image. In addition, all images associated with the data set will be displayed under the directory “ ASPECT Photos” on the Temporary Places directory. To load the actual image into Google Earth, click the corresponding camera icon of the interested photograph. This will open a data balloon showing a review of the image and two options located at the bottom of the balloon;

* “[Download Image Overlay into Google Earth](http://www.epaaspect.net/googleearth/Harvey_Sept2017/aspect/images_24/overlays/20170911191937650.kml)” – Clicking on this option will download the image into the Google Earth database. After the image is downloaded, it will be shown as an overlay on the main Google Earth image. This process can be repeated as many times as needed. Note: each time you execute this procedure the referenced aerial photograph frame will appear in blue in you temporary places pane on the left hand side of the Google Earth window
* “[Download High Resolution Image into Web Browser](http://www.epaaspect.net/googleearth/Harvey_Sept2017/aspect/images_24/overlays/photos/20170911191937650_gecorr.htm)” -- This option is selected if the user wishes to view a full resolution image as a stand-alone product in a web browser. Depending internet speed, this option may take up to a few minutes to fully load the image. Once in the browser, the image can be copied and used for various publishing purposes.

**Mosaic Aerial Photography (Optional) --** Selection of a color mosaic will load a georectified color mosaic into Google Earth. Selected of the appropriate image is referenced to the date of collection. Due to the large size of these files, several minutes may be required to fully download the file.

**False color aerial infrared imagery –** Georectifed false color aerial infrared imagery is obtained using this option. The color palette of this imagery is false since the data represents three IR bands combined to provide an RGB image. Manipulation of the images is done in a similar fashion as to the color aerial photography.

Note: When exiting Google Earth you can save your temporary places so that they will be available the next time you want to look at this data.  Alternatively, you can merely keep the KML file as your SAT key index into the EPA ASPECT website for accessing this data at a future time.

**Oblique Photography --** Viewing of oblique color aerial photography is accomplished by selecting the oblique photography option. Once the option is selected, available oblique images for the last flight are displayed as a collection of arrows. These arrows represent the location that the aircraft was positioned and the direction the camera was pointed when the frame was collected (about 2 o’clock of the heading looking about 45 degrees down). As the cursor is moved over the respective arrows, the frame number will be highlighted. If an arrow is double clicked a thumb nail of the image will be displayed. The user has the option of downloading the image in a browser.

Aircraft Video -- During most chemical related activities, airborne downward looking video is collected while the chemical sensors are active. This video is effectively a NTSC color 540 scan format collected in an AVI format. No special conversion is needed to view the video on a standard Windows computer. Selection of the video option will present data in a similar fashion as the other mission related products and will be identified as a small movie camera icon. Selection of an icon will provide the following information:

* Type -- Visible video
* Date – Date that the video was collected (based on UTC time)
* Time – UTC time
* Latitude – In decimal degrees
* Longitude – In decimal degrees
* Video file name
* [Download Video](http://www.epaaspect.net/googleearth/Harvey_Sept2017/aspect/videos_25/overlays/data/170911_183852_183903.avi) option

To download the video to your local computer, click on the download video link and the video will open in a separate page asking if you wish to open the file with an installed media player (such as Windows Media Player) or to save the file for subsequent use. Irrespective, once the file is played, the video will show a color view looking down out of the aircraft.

**Gamma Ray Information –** If the ASPECT mission profile required that radiological data was collected, selection of the option would provide a set of gamma ray and neutron data products include:

* An aerial total gamma count vector map and contour
* A Sigma statistical analysis of the survey area
* An gamma energy exposure map and contour
* A neutron total count and contour map

[**Aircraft F10 Flight Tracks and Data**](http://www.epaaspect.net/googleearth/Harvey_Sept2017/aspect/kml/aircraft_locations_Harvey_Sept2017.kml) **--** Flight track information for the last mission is available using this selection. Once selected, a color flight path will be displayed. Multiple tracks can be displayed by selecting additional paths from other missions. Flight tracks also shows locations were various sensor systems were in operation. This feature provides a convenient cross reference to examine data corresponding to areas the aircraft surveyed.

**Weather Station Data** – The final option on the icon is a collection of weather station reported data. This includes National Weather Service (NOAA) links as well as local State and aviation based links. These sources provide a convenient and up-to-date source for meteorological data including dispersion model initialization.