SOC 4650/5650: PS-08 - Petrochemical Infrastructure in Missouri

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Directions

Using data accessed from the course data release, create the following maps describing coal mining infrastructure and geology in Missouri and Illinois. Your entire project folder system, including data and map output, should be uploaded to GitHub by **Monday, April 16th** at 4:15pm.

Part 1: Analysis Development (Review from Lectures 01 and 02)

The goal of this section is to create a self contained project directory with all of the data, map documents, results, and documentation a project needs. Make sure to include all relevant directories, a well formatted notebook, and a `README` that traces the changes you make to all of your data.

Part 2: Petrochemical Infrastructure in Missouri

Petrochemicals are derived from petroleum and are used in a variety of manufacturing applications as well as plastics. A large amount of infrastructure exists to move petrochemical products around the United States.

1. In a new map document, add data on petrochemical terminals and petrochemical pipelines from `USInfra` as well as the Missouri state boundary from `MOBoundary`.
2. Choose an appropriate coordinate system for statewide mapping.
3. Create a new feature class that contains only the petrochemical terminals in Missouri. Symbolize these data as a feature layer.
4. Create a new feature class that contains only the petrochemical pipelines in Missouri. The pipeline features should *not* extend past the Missouri state border. Symbolize these data as a feature layer.

5. Add shapefiles for the surrounding states from `MOBoundary` to your map document and symbolize them as ground layers. Symbolize the original petrochemical layers (that contain data on the entire United States) as ground layers as well and position them so that they are only visible outside of Missouri.

6. Create a well designed and well laid-out map layout that shows the locations of petrochemical infrastructure within Missouri. Be sure to pay close attention to the layout elements you add to your map (including, title, details on data sources, etc.). Export the map layout as a `pdf` at `300dpi`.

Part 3: Petrochemical Infrastructure in the St. Louis Area

7. In a new map document, add the data on the Metro county boundaries from `MetroHydro.gdb`.

8. Choose an appropriate coordinate system for regional mapping.

9. Create a new feature class that symbolizes this region as a single polygon.

10. Using this new regional polygon, create a new feature class that contains only the petrochemical terminals in the Metro West area. Symbolize these data as a feature layer.

11. Using this new regional polygon, create a new feature class that contains only the petrochemical pipelines in the Metro West area. The pipeline features should *not* extend past the Metro West region. Symbolize these data as a feature layer.

12. Add shapefiles for Missouri and Illinois state boundaries to your map document and symbolize both of these layers as ground layers. Symbolize the original petrochemical layers (that contain data on the entire United States) as ground layers as well and position them so that they are only visible outside of Missouri.

13. Add another Missouri state boundary shapefile to your map document and overlay it on top of all of your data. Symbolize it with a hollow fill and adjust the outline hue so that it clearly distinguishes the state border.

14. Create a well designed and well laid-out map layout that shows the locations of petrochemical infrastructure within the Metro West area. Be sure to pay close attention to the layout elements you add to your map (including, title, details on data sources, etc.). Export the map layout as a `pdf` at `300dpi`.