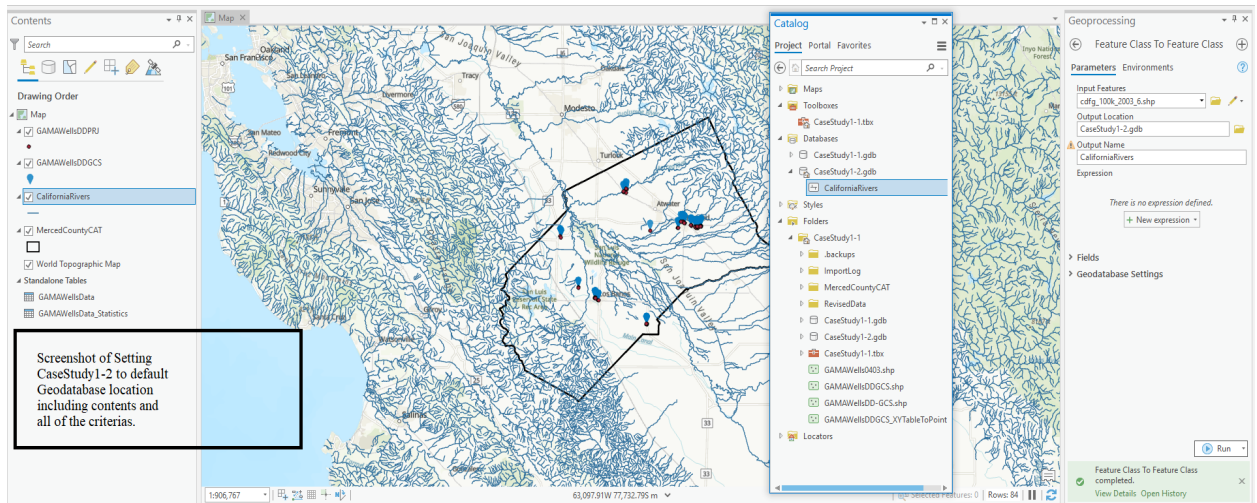


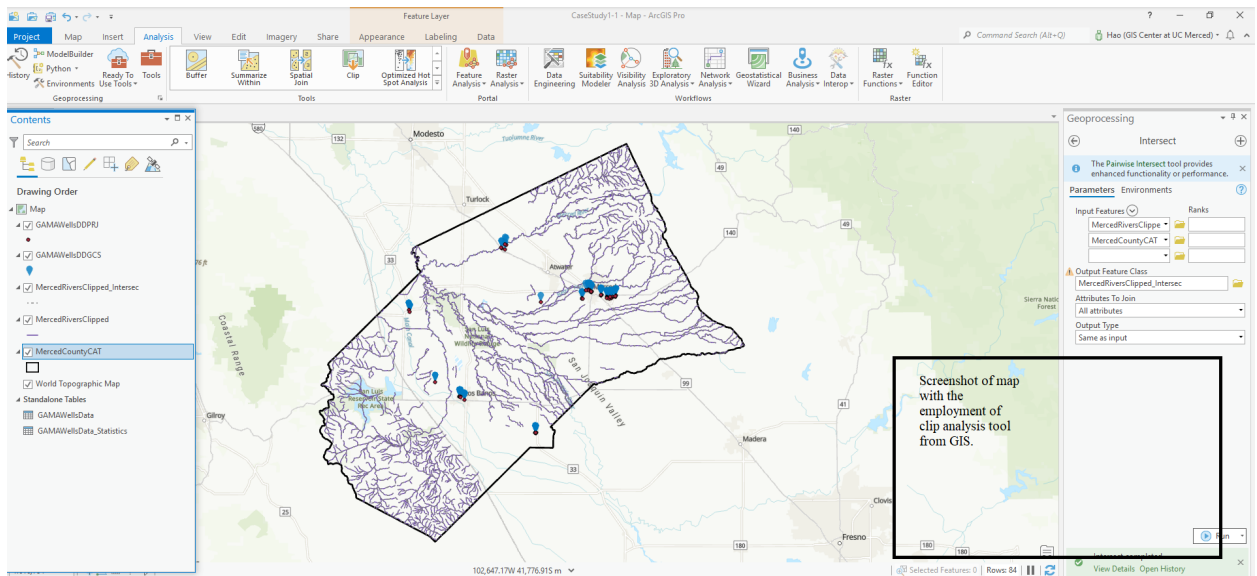
Hao Mai
Professor Madeline Brown
Engr 180
May 7, 2022
Case Study 1-2

Lab 1 - 2 Deliverables Utilizing Common Features and Tools within ArcGIS

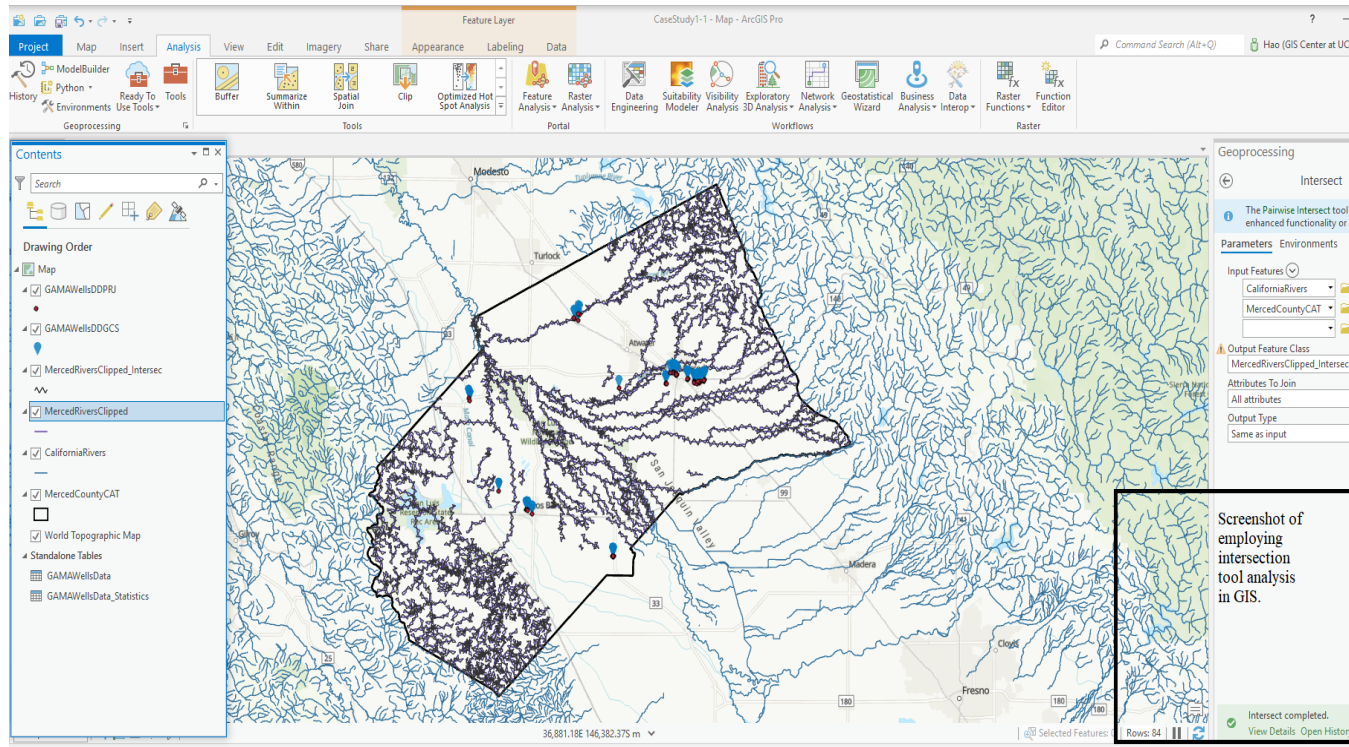
- Screenshot catalog pane and geodatabase data contents of newly reconfigured case study 2 :



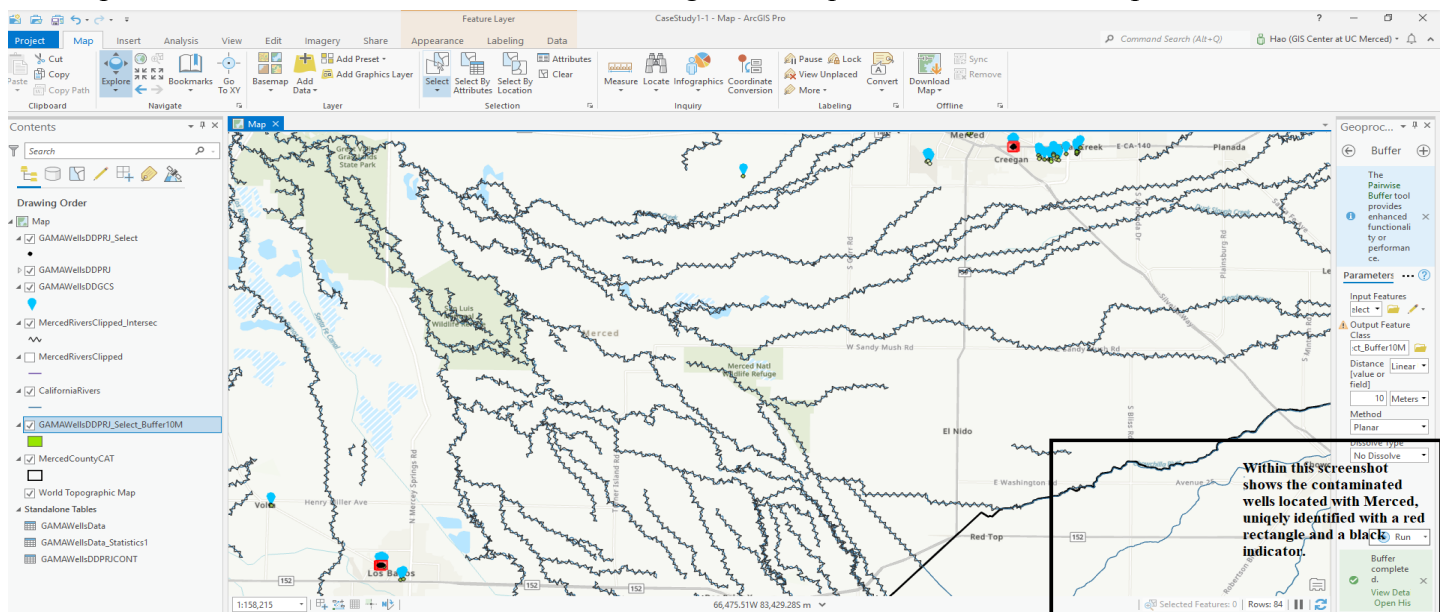
- Screenshot of clip layer of the map:



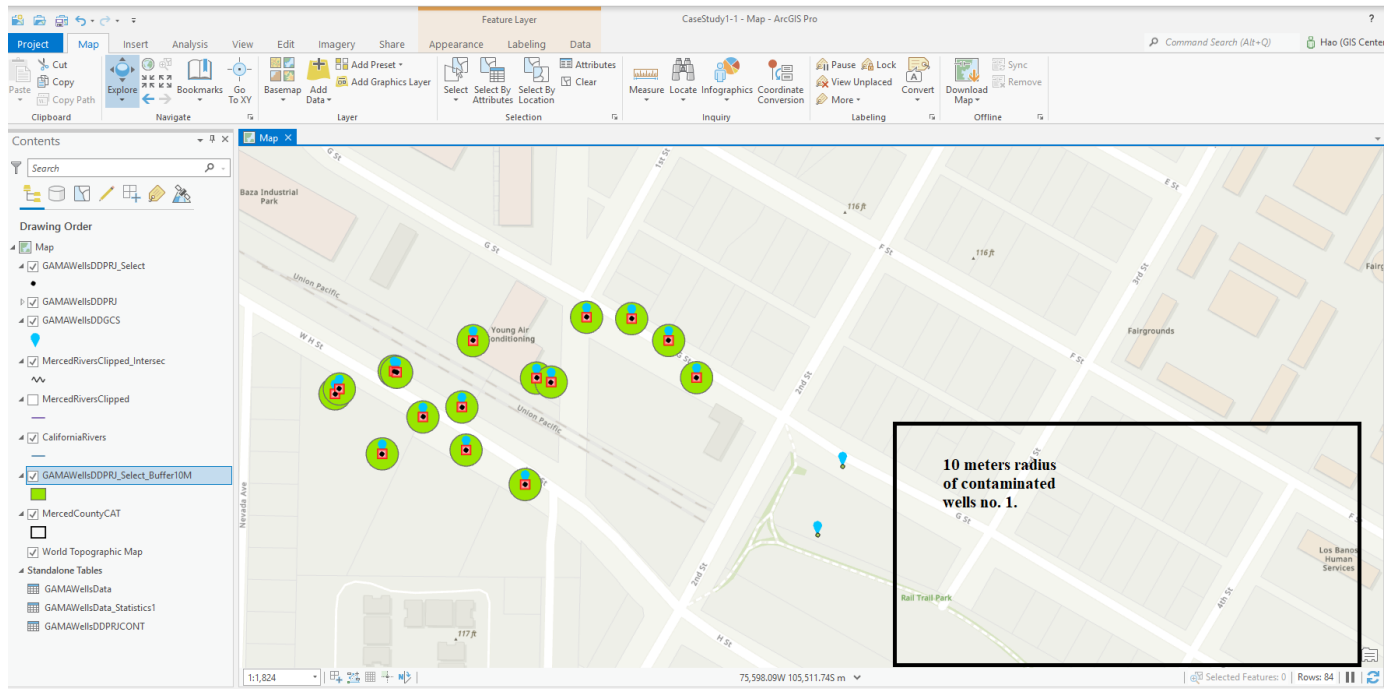
- Screenshot of intersect layer within the map:



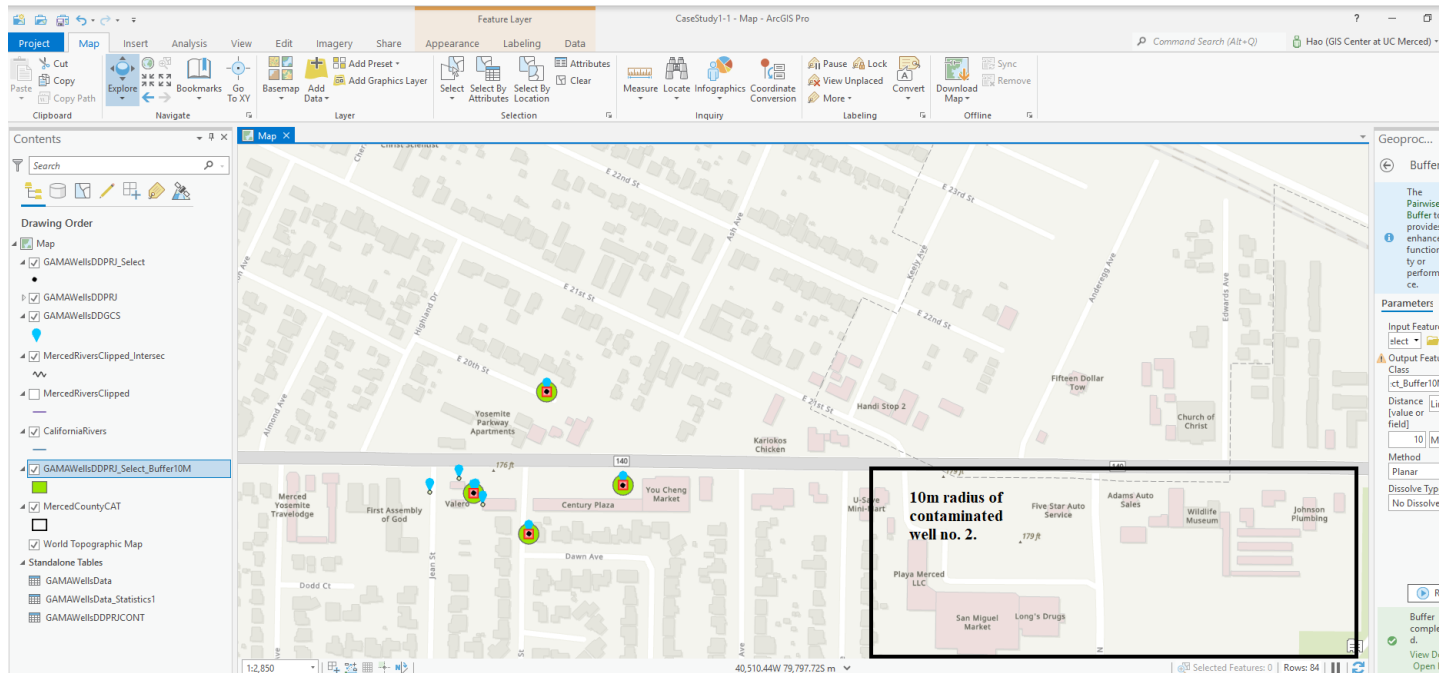
- Screenshot of contaminated wells from join operation from earlier composition procedure, the contaminated wells are in triangular red squares with a black ball points:



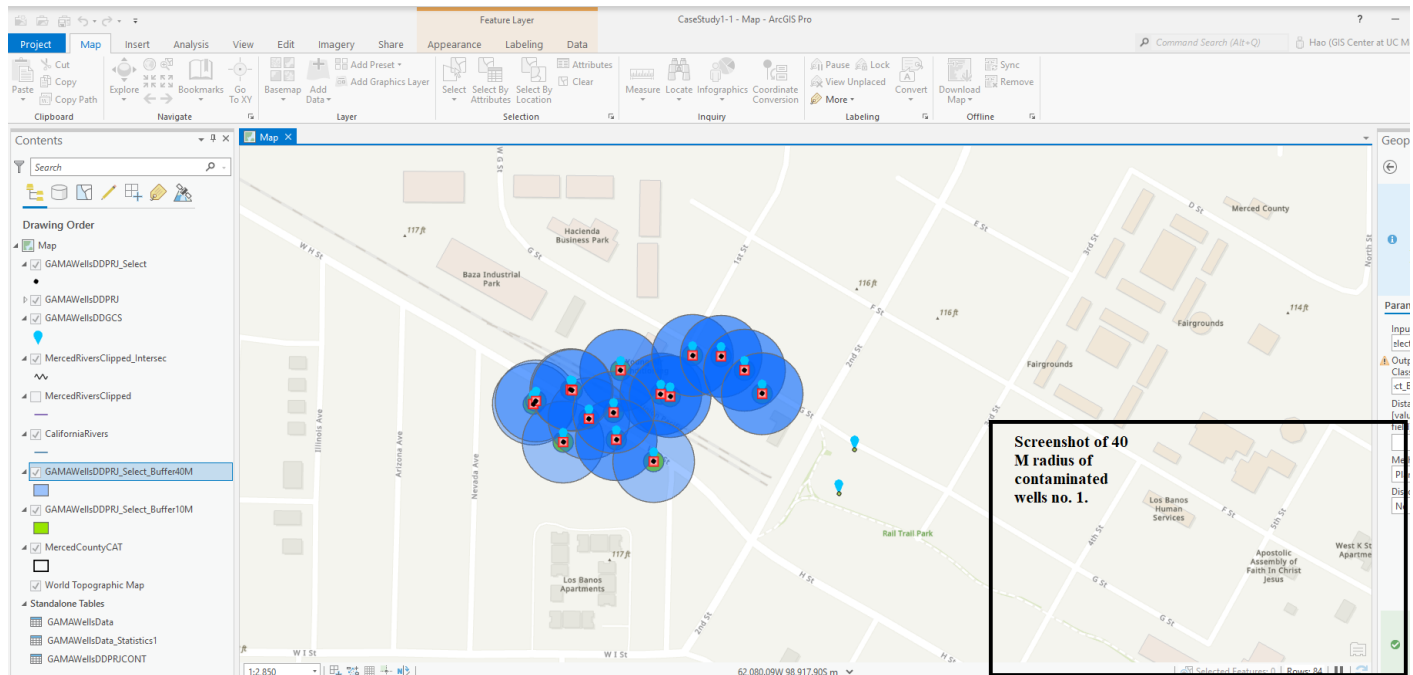
- Screenshot of 10 meters radius buffer for contaminated wells. Since there are two area within Merced county which has area where contaminated wells are located; thereby, this is a screenshot of the first location:



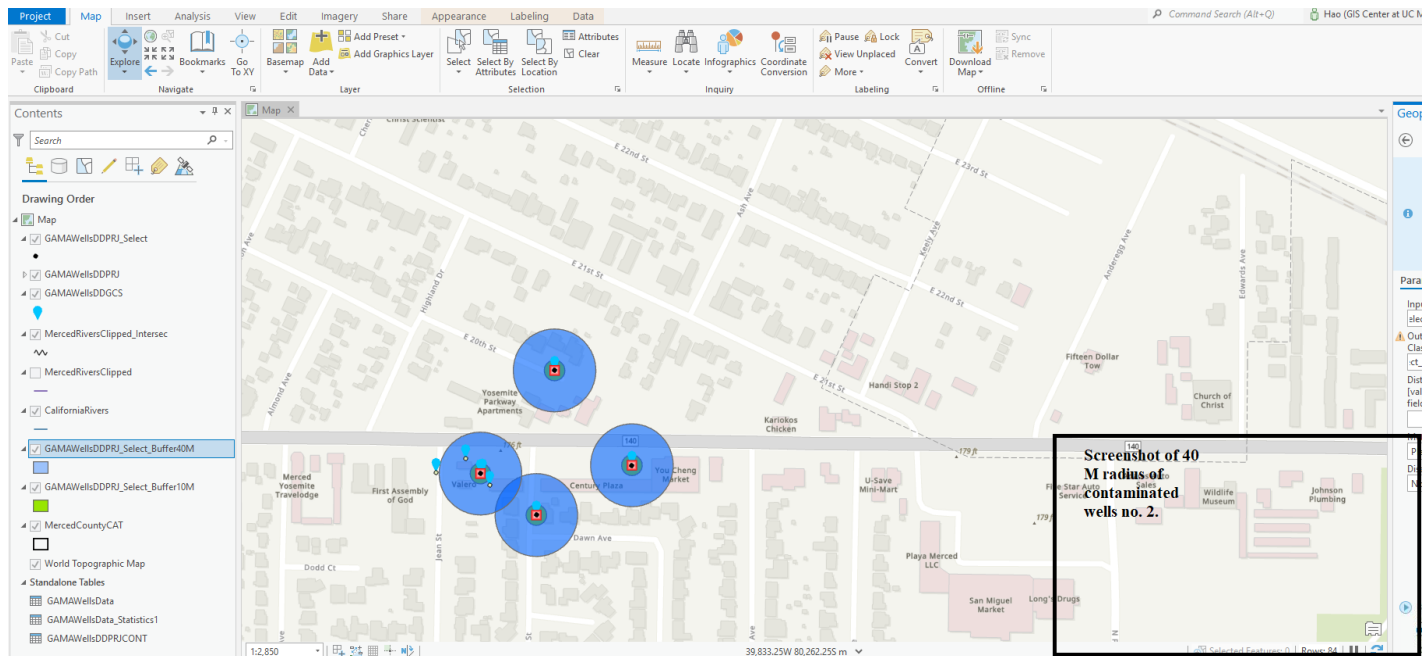
- Screenshot of 10 meters radius buffer for contaminated wells no. 2 :



- Screenshot of 40 meters radius buffer for contaminated wells within Merced County; as mentioned before, since there are two area this is the first screenshot of the first area:

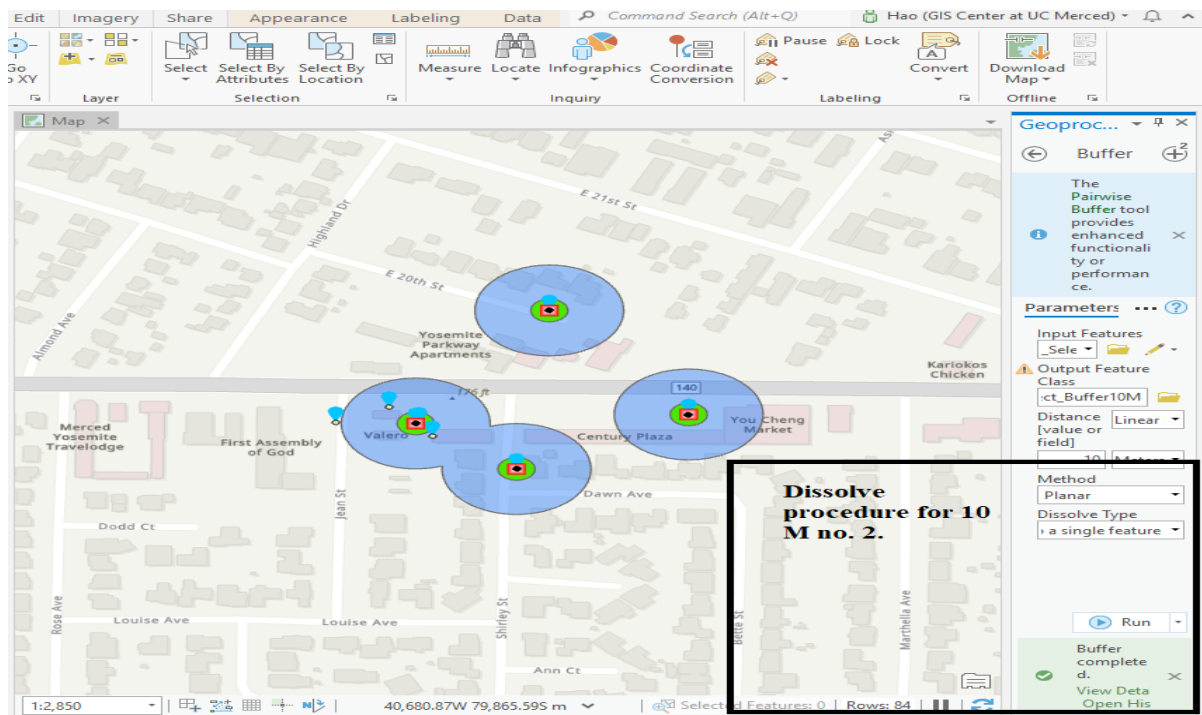
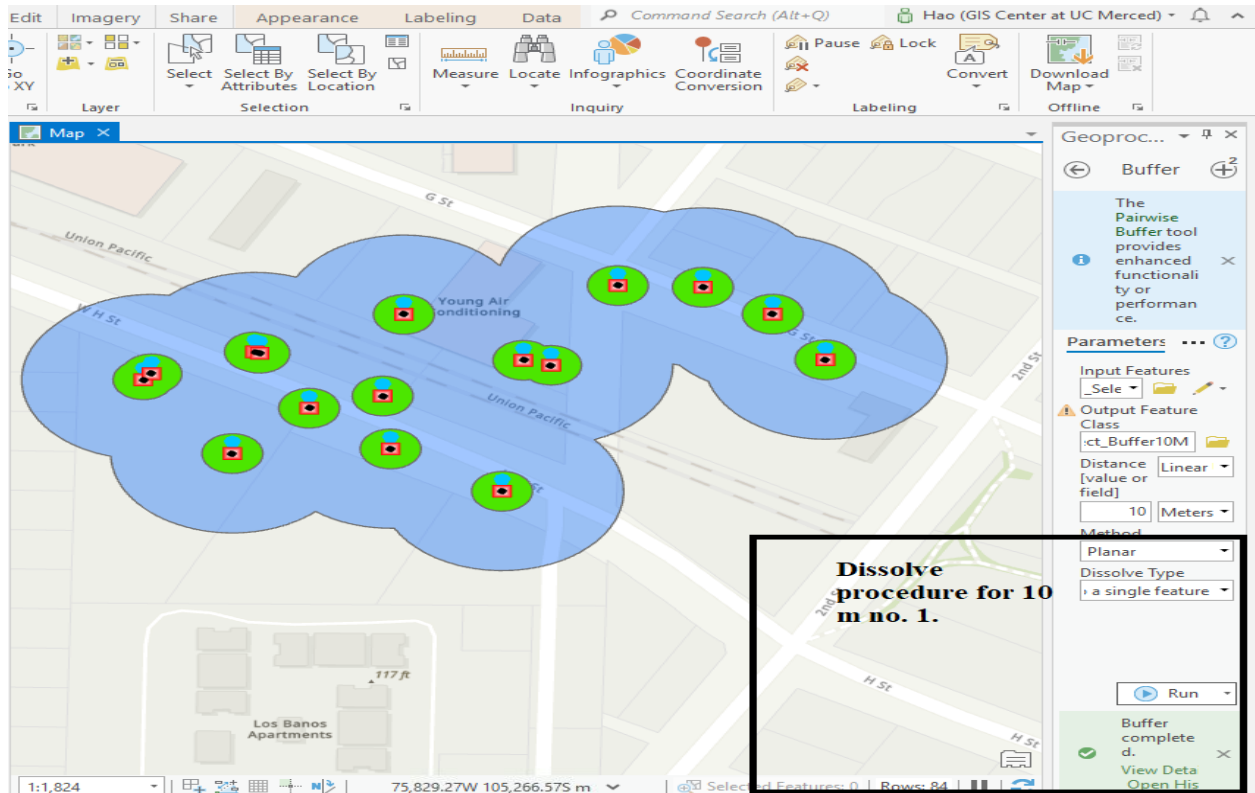


- Screenshot of 40 meters radius buffer for contaminated wells no. 2 :

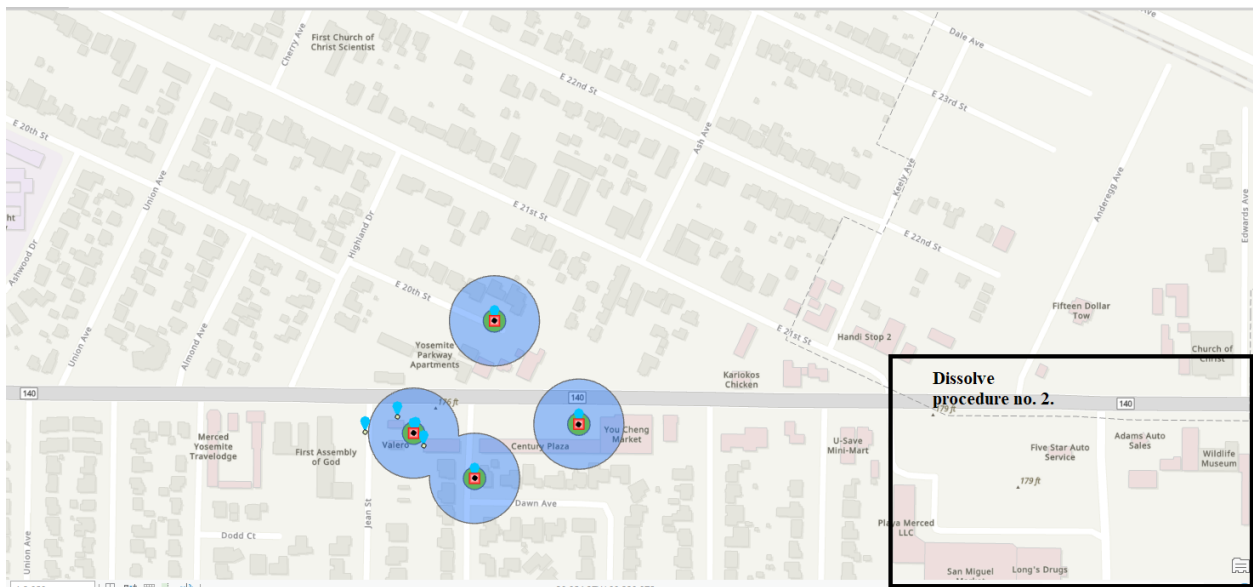
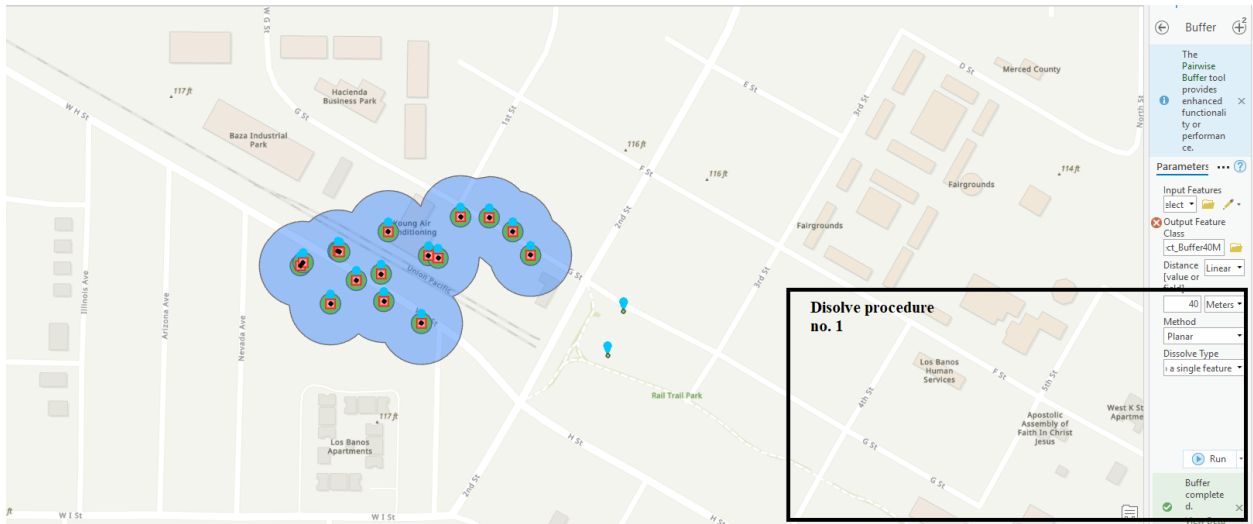


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- The figure consists of two screenshots of the QGIS interface. The top screenshot shows the 'Buffer' tool settings. The 'Input Features' are selected as 'ct_Buffer40M'. The 'Output Feature Class' is set to 'Distance (Linear)'. The 'Distance' is set to 40 Meters. The 'Method' is set to 'Planar'. The 'Dissolve Type' is set to 'a single feature'. The 'Run' button is highlighted. The bottom screenshot shows the result of the buffer operation. A large blue area represents the buffer zone around the point layer. The buffer zone is labeled 'Dissolve procedure no. 1'.

- Screenshot of dissolve procedure for 10 meter radius buffer of contaminated wells:



- Screenshot of dissolve procedure for 40 meter radius buffer of contaminated wells:



- Production Quality Map Composition:

The main exercise from this lab is to implement what we have learned within both case study one and two to construct our own production quality map, and project specific criterias as per prompted within the lab's instruction. To my understanding, the idea of production quality is the ability to fluently utilize tools from object oriented driven software such as ArcGIS to manipulate data to convey a clear message to the reader. It is universally accepted that distortion is an inevitable factor which confronts GIS users; however, the ability to maximize the production quality of a map will in turn minimize distortion, precisely interpolate unavailable data with statistical function operators, and the usage of coherent symbology will refine the quality of the map for the most effective delivery. The production quality of a map's composition adheres to the skillset of the GIS user, and their understanding of the tool's concept. Without thorough conceptualization of the mythology of tool implementation of ArcGIS tools and features will cause confusion and poor interpretation of the map.

- Production Quality Map Composition Procedure:

First, I selected a new project and imported a new map layout. Afterwards, I imported the shape file that was provided for me by the professor on course onto ArcGIS pro - I also changed the symbology of the Merced County boundary to correspond with case study 1 - 1. From the original case study map, I use the select analysis tool to select the desired contaminated wells within Merced county, and then I export the data into the new map project. Note that the data of contaminated wells has already been joined as per instruction in case study 1-1. Then I changed the symbology of the selected wells that are contaminated. Later, I buffered the location of the selected wells to the criteria of ten and forty meters as well as one kilometer radius of the contaminated wells. The next step is to create a legend, a northern compass, a scale ruler, and title for the map. First, open the insert tab, and choose the option to input a layout. After, choose to add the map from the original project onto the newly created layout. Once suffice, the choice to add a legend, compass, scale and title will appear within the insert tab. Utilize these options to create the necessary requirement for the quality map production criteria. I also adjusted the symbology of the map in terms of fonts and text color to make the layout more proportioned to the size scale of the map.

-
- 0 10 20 40 Kilometers
- ### Merced County Contaminated Wells within a 1 Kilometer Radius
- Legend**
- GAMAWellsDDPRJ_Select
 - MercedRiversClipped
 - GAMAWellsDDPRJ_Select_Buffer
 - MercedCountyCAT
- Map showing Merced County, California, with a focus on the Merced River watershed. The map displays the Merced River network (purple lines) and the locations of contaminated wells (red dots) within a 1-kilometer radius. The map includes a scale bar (0 to 40 Kilometers) and a north arrow.

