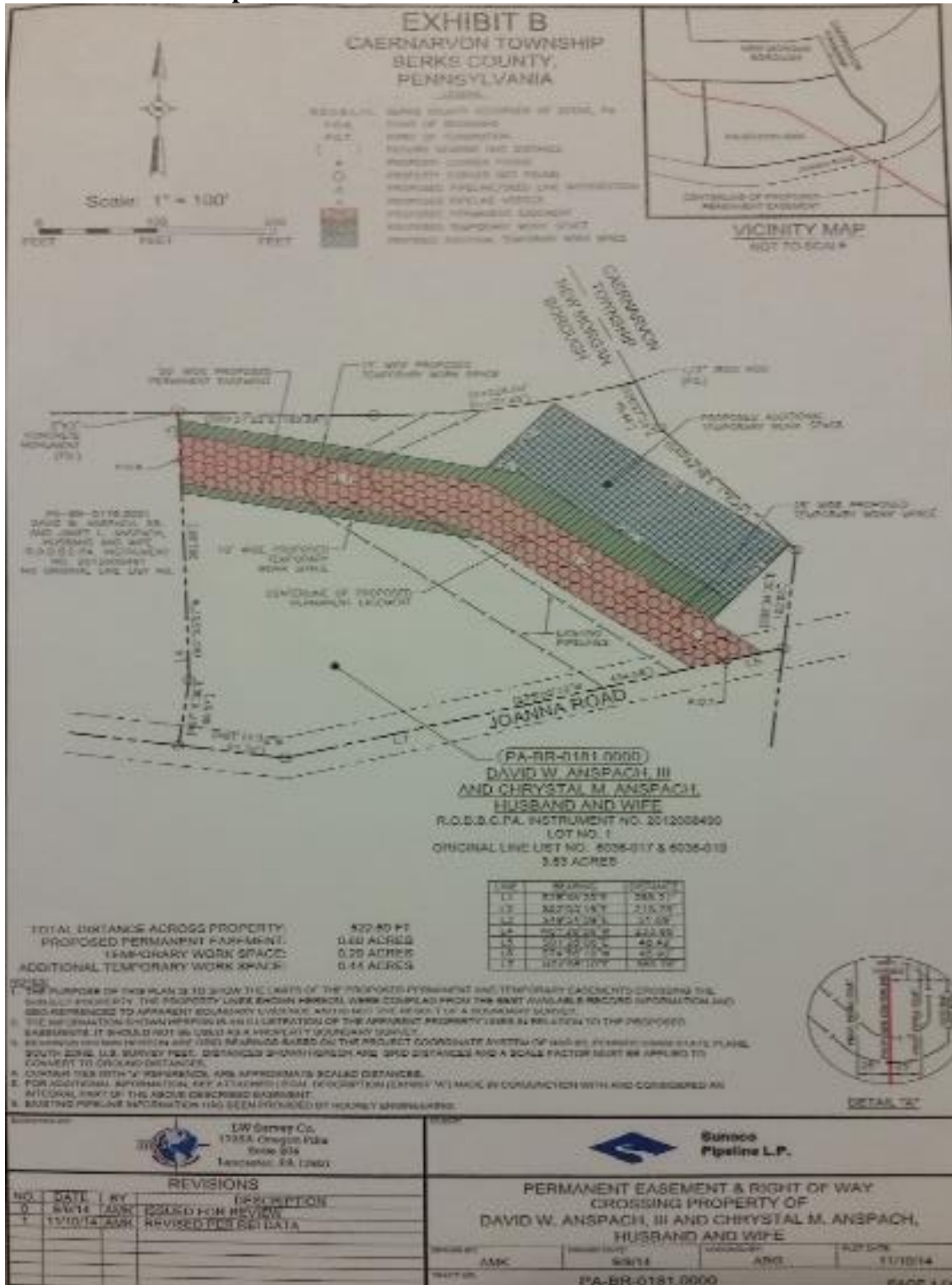
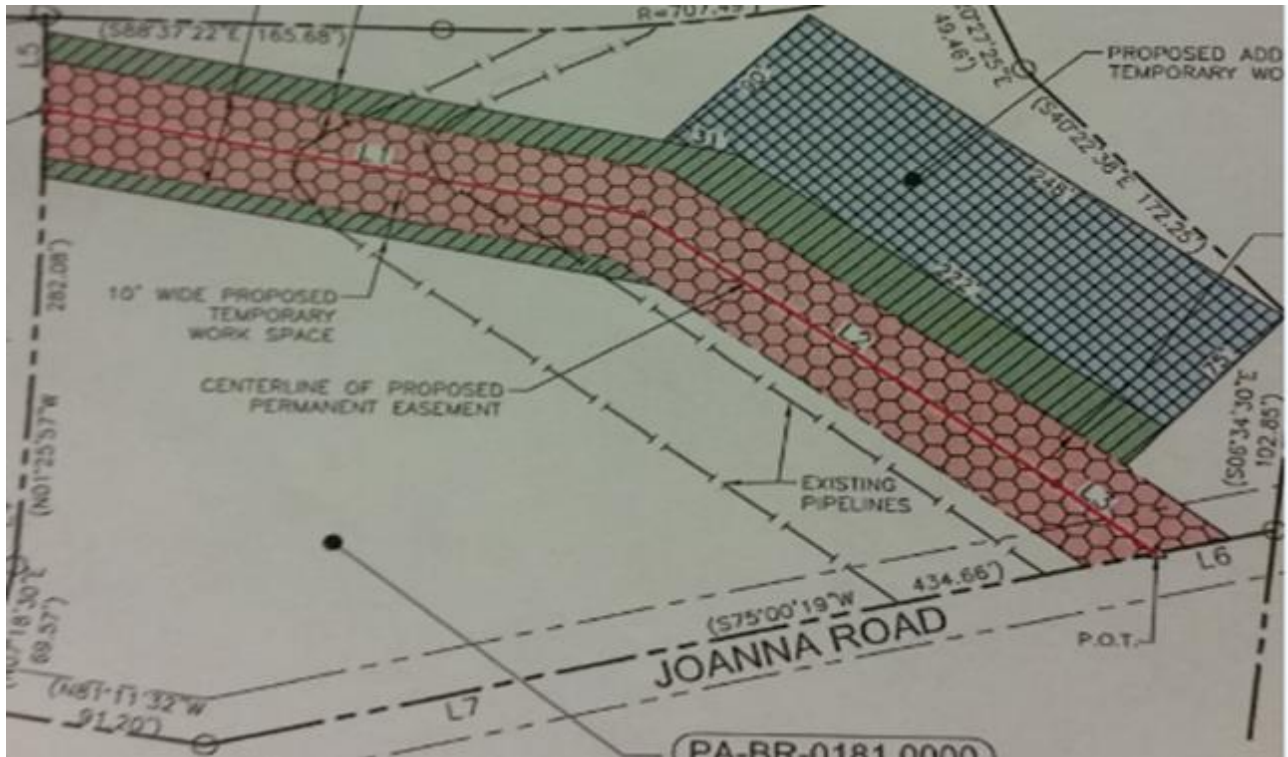


Attachment - David Anspach – 10-8-17





One might notice from the original Right of way agreement that one single red line shows the route of a single pipeline, it was an oversight by the agent to specifically identify that two different pipelines were to be laid in the common right of way.



(Left to right-1) erosion protection failures at top of hill 2) HDD site full of water 3) complete wash out of HDD rig, sediment and drilling mud 3) ponding prior to entry into East Branch of Conestoga)



Left- Normal conditions of East Branch of the Conestoga
Right- August 18th- Notice the grey tint of drill mud in addition to brown sediment.

Inadvertent return of drilling fluids (grey)



Roll off dumpster leaking some unknown fluid



Drilling Mud spills (grey)



Drilling mud spills (grey)



Below: Joanna Road, ArcGIS overlaid with Karst Geology

Karst Topography Generalized - Karst Topography Sinkholes Generalized



Karst Topography Generalized - Karst Topography Surface Depressions Generalized



Karst Topography

- Sinkhole
- Surface Depression

Karst Topography

- Sinkhole
- Surface Depression

Karst Geology (ODNR-DGS)

Karst - Known and indicated karst locations of Ohio



Karst - Probable karst areas of Ohio



Karst - Karst geology of Ohio

Silurian- and Devonian-age carbonate bedrock overlain by less than 20 feet of glacial drift and/or alluvium



Silurian- and Devonian-age carbonate bedrock overlain by more than 20 feet of glacial drift and/or alluvium



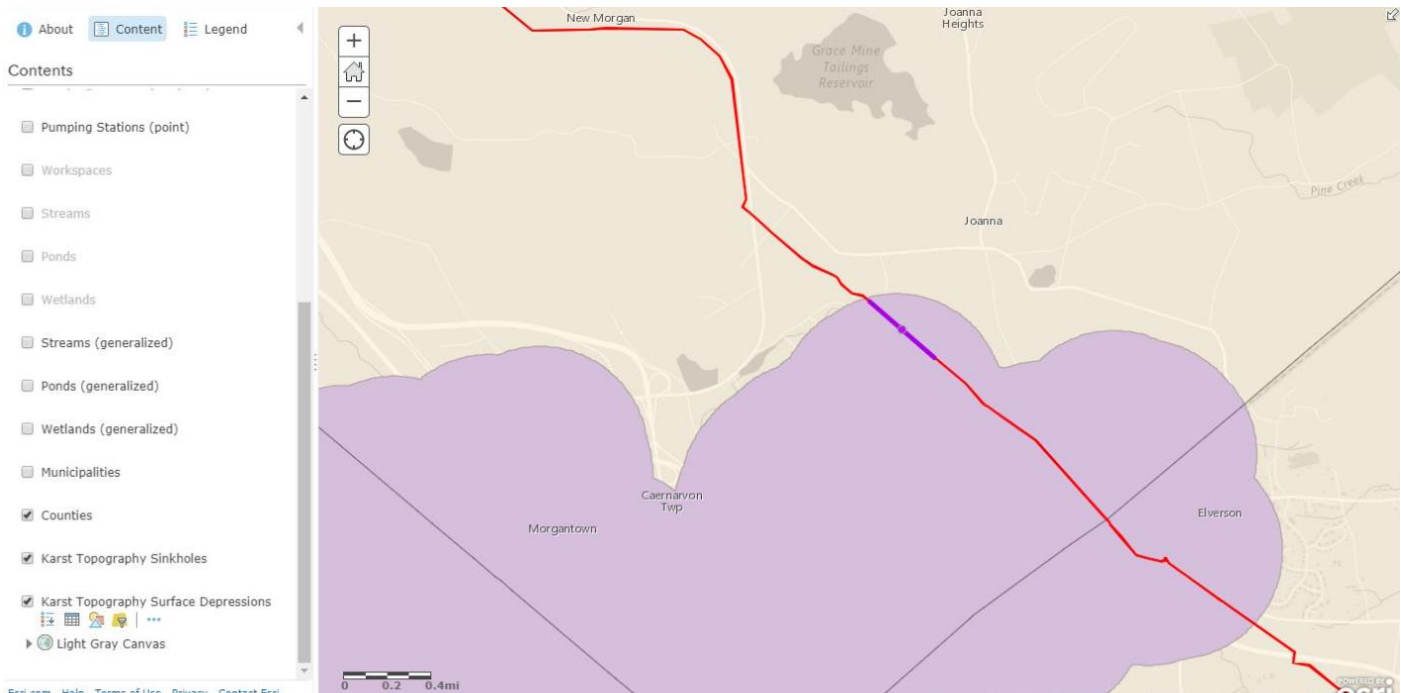
Interbedded Ordovician-age limestone and shale overlain by less than 20 feet of glacial drift and/or alluvium



Interbedded Ordovician-age limestone and shale overlain by more than 20 feet of glacial drift and/or alluvium



Below: ArcGIS map with Pipeline Overlay



Left: Expanded view showing the extent of the HDD route through the Karst region. While not entirely a flawless photo it can be clearly seen that both the beginning and end of the HDD# S3-0250 lie within the identified Karst Region. The extremely sensitive and unstable region is particularly susceptible to geological and hydrological damages through the use of Horizontal Directional Drilling (HDD).