

*A Veteran Owned Small Business*

P.O. Box 89, Marble, PA 16334 ∞ 814 354 2771 ∞ cwalton@venustel.com

---

## **COAL/NON-COAL DETERMINATION**

for

PA DEP Bu. Oil & Gas Management  
Permit Application for Drilling or Altering a Well

WELL ID: Apex Energy, LLC – Fatur Pad

WELL LOCATION: Salem Twp., Westmoreland Co., PA

LATITUDE: 40.4209000° N LONGITUDE: -79.5501861° W

Program guidance defines a workable coal seam as one that equals or exceeds 28” in thickness, lies at a depth of 100’ or more from the surface, and is sufficiently laterally extensive to support an underground mine. Based on these criteria, available evidence, and my professional expertise, I have determined to a reasonable degree of scientific certainty that wells drilled on the subject well pad should not encounter a workable coal seam, and it thus qualifies as a **NON-COAL** site.

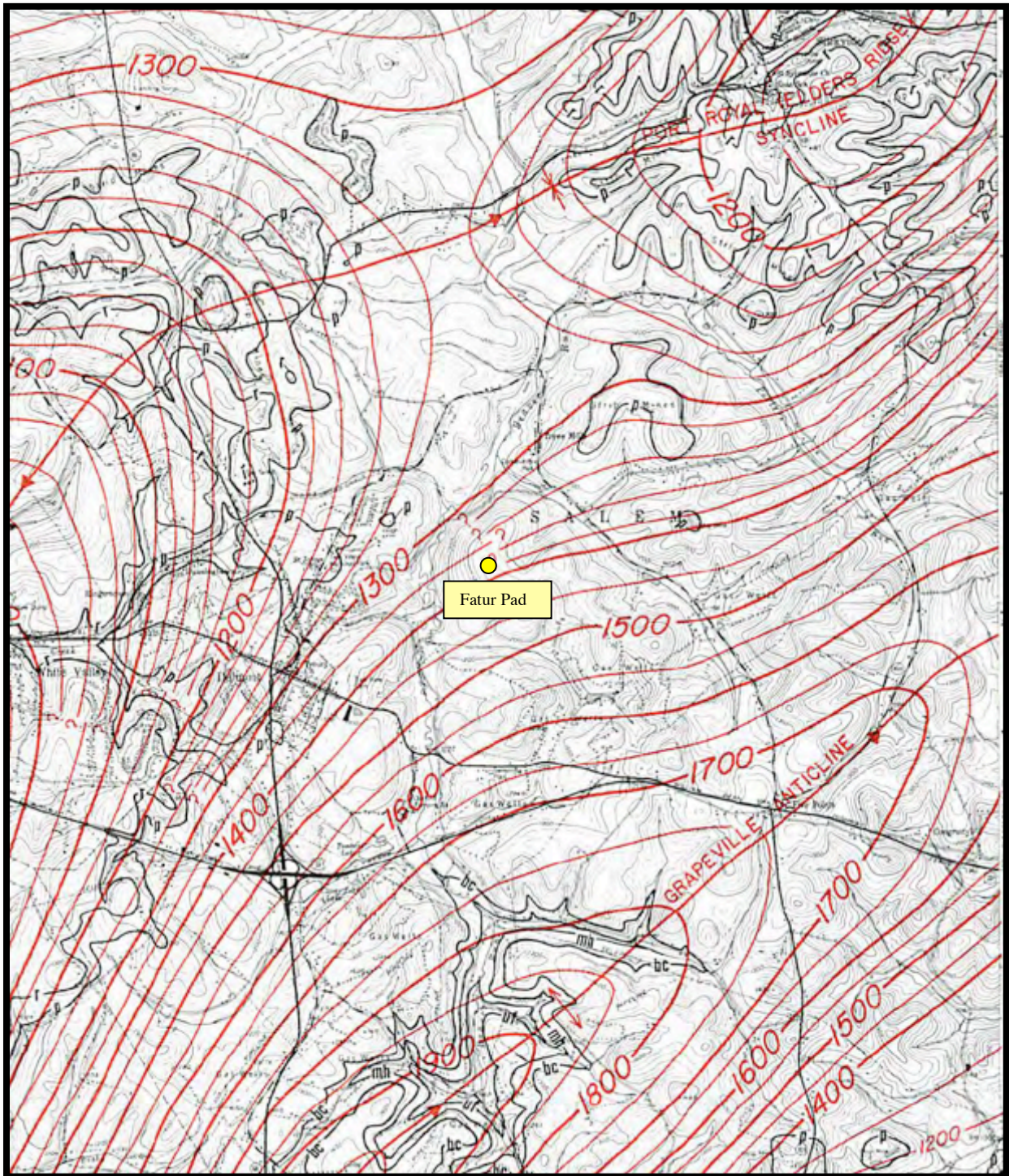
C. G. Walton, P.G. #499-G

(See following substantiation)

WELL LOCATION MAP (Slickville 7.5' Topographic Quad)



BEST AVAILABLE GEOLOGIC MAPPING (PA Geo Survey Min Res Report 94)



# SPECIFIC COAL SEAM MAPPING (PA Geologic Survey M 68)

## EXPLANATION

### RELIABILITY OF DATA AND GENERAL THICKNESS



Inferred.



Coal seam measured or indicated and  
less than 28 inches thick.



Coal seam measured or indicated and  
greater than 28 inches thick.



Coal seam mined out.

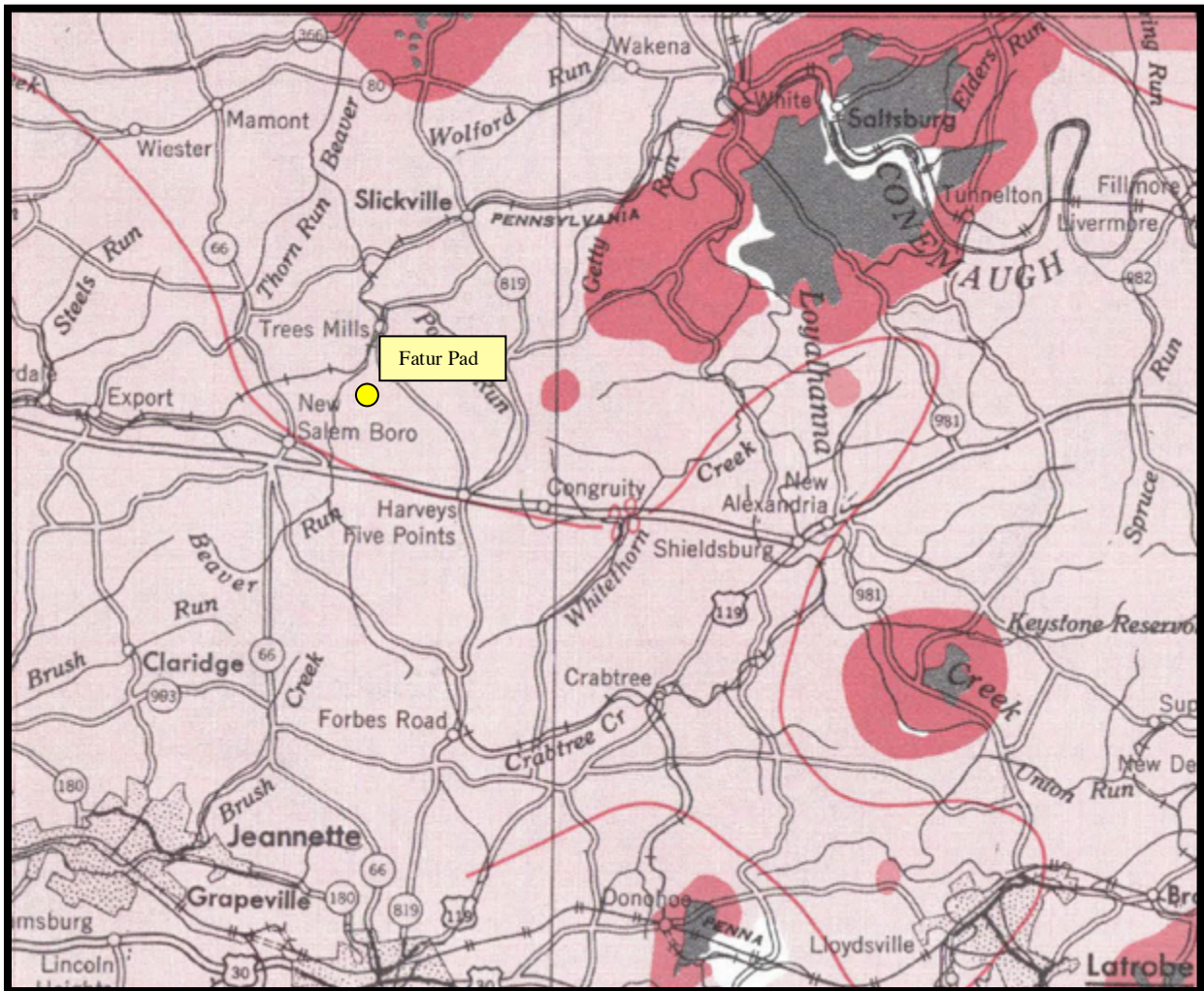
### ADDITIONAL THICKNESS DATA



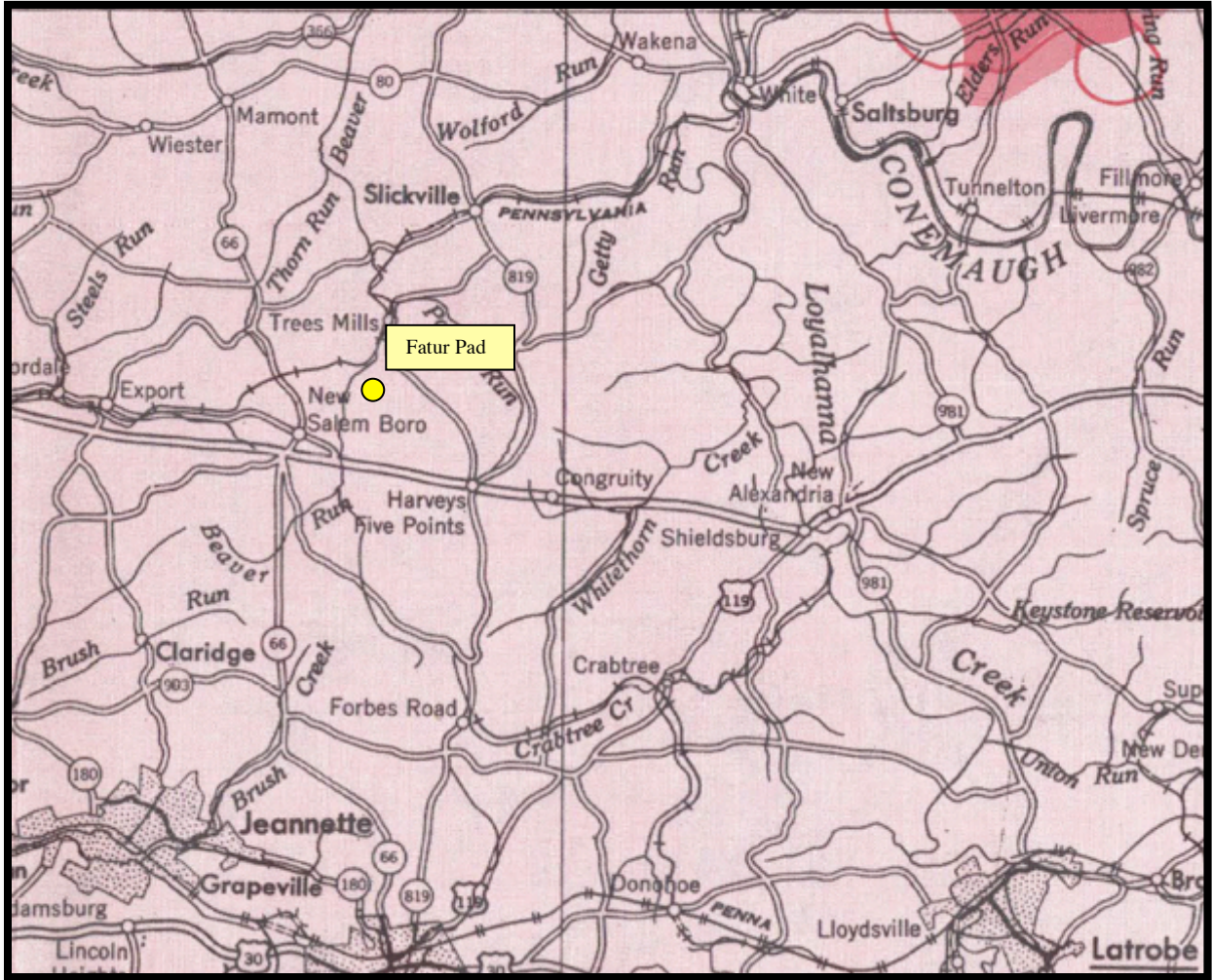
Coal seam thickness contour line. Contour  
interval variable.

Coal seam contour line extended to inferred  
areas and through areas from which coal has  
been removed by erosion in order to indicate  
possible original thickness trend of coal seam.

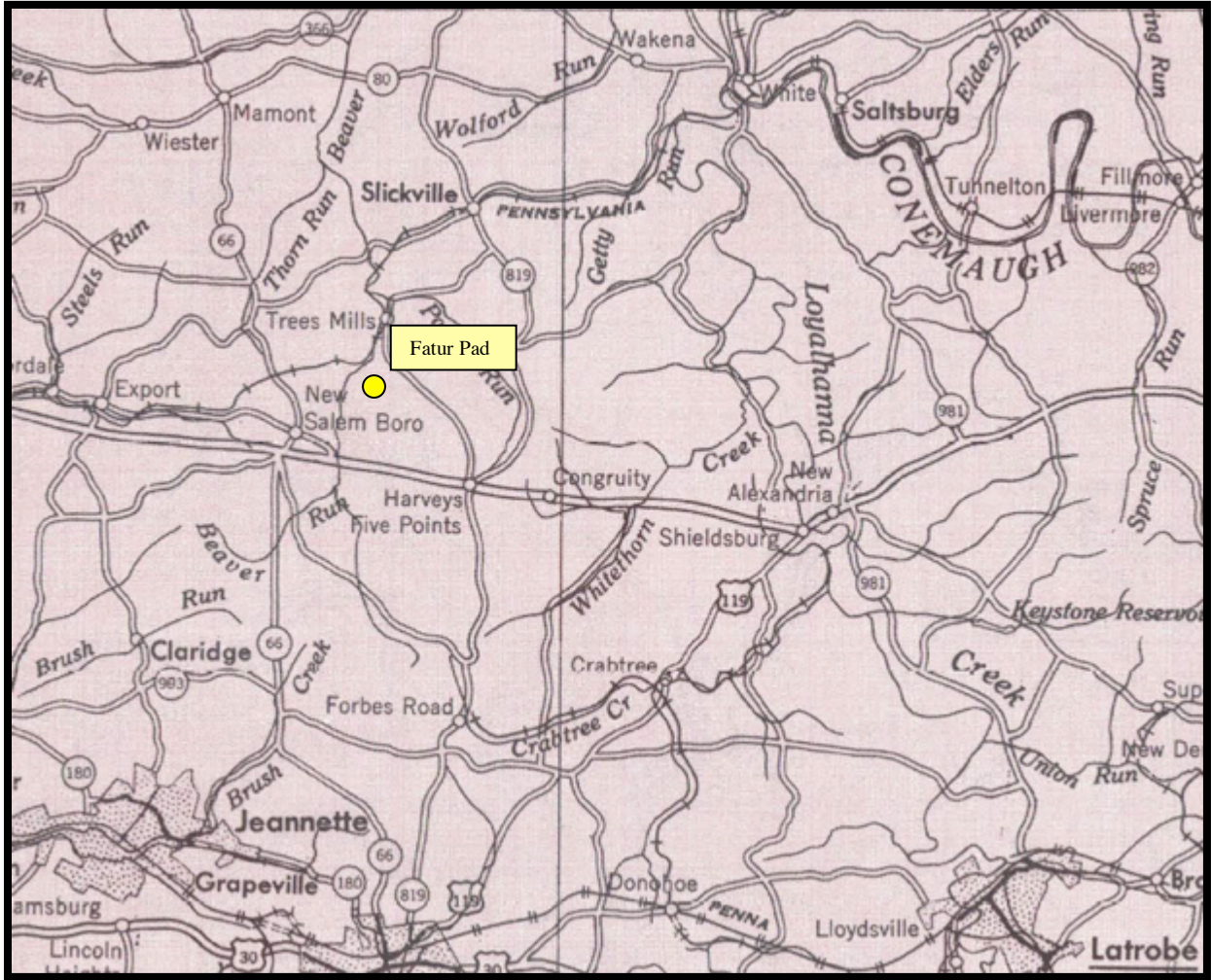
SPECIFIC COAL SEAM MAPPING (Upper Freeport Seam)



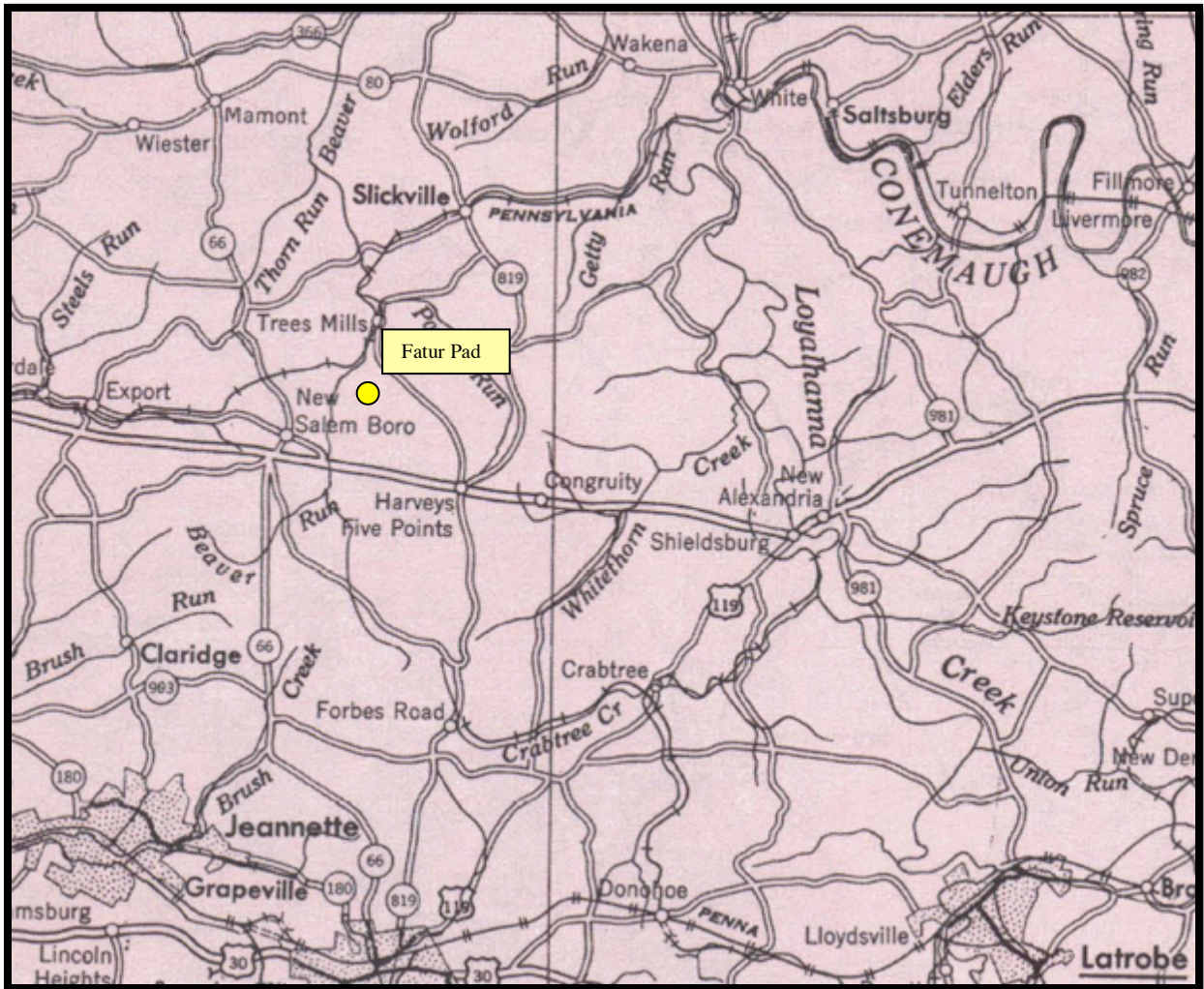
SPECIFIC COAL SEAM MAPPING (Lower Freeport Seam)



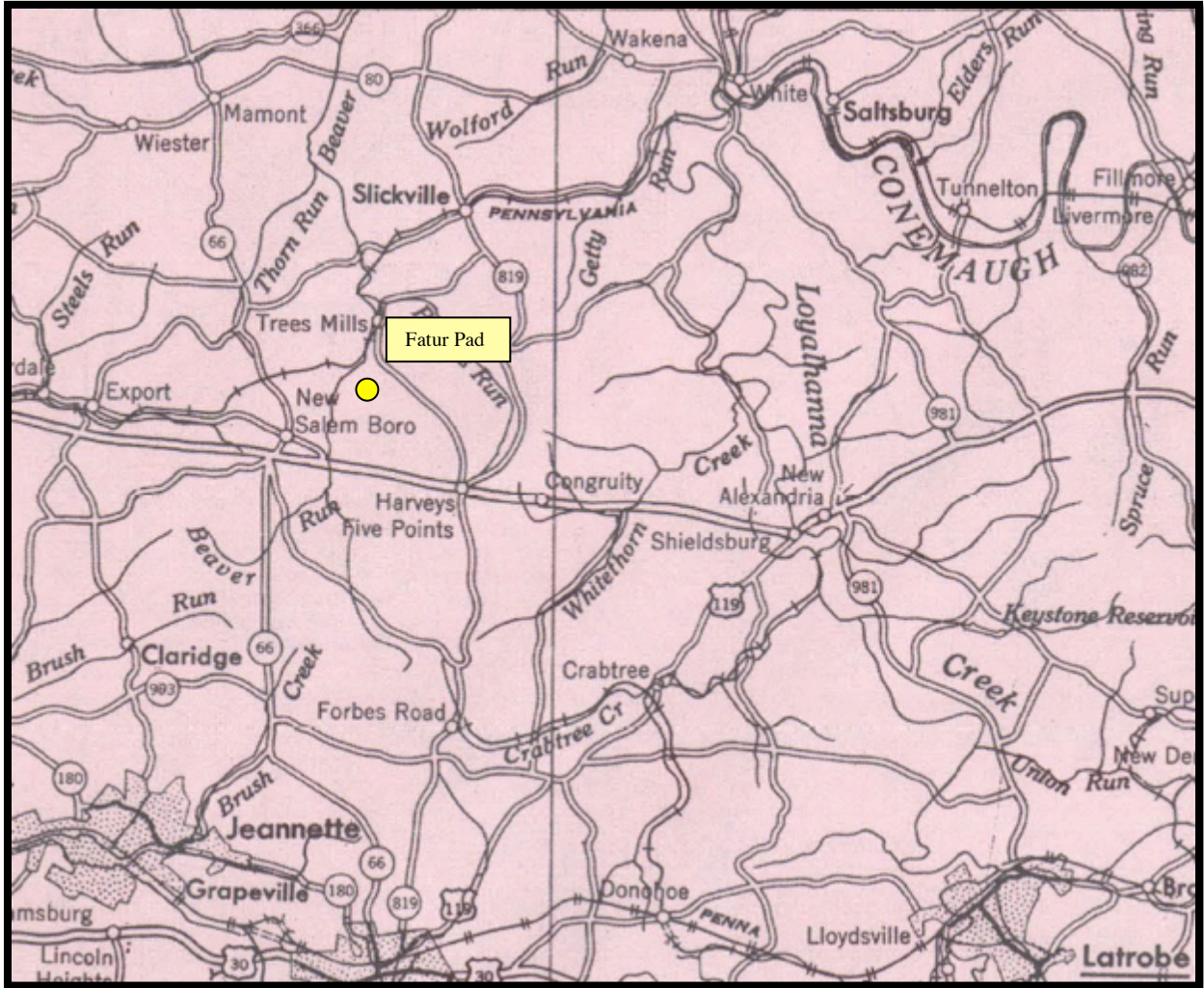
SPECIFIC COAL SEAM MAPPING (Upper Kittanning Seam)



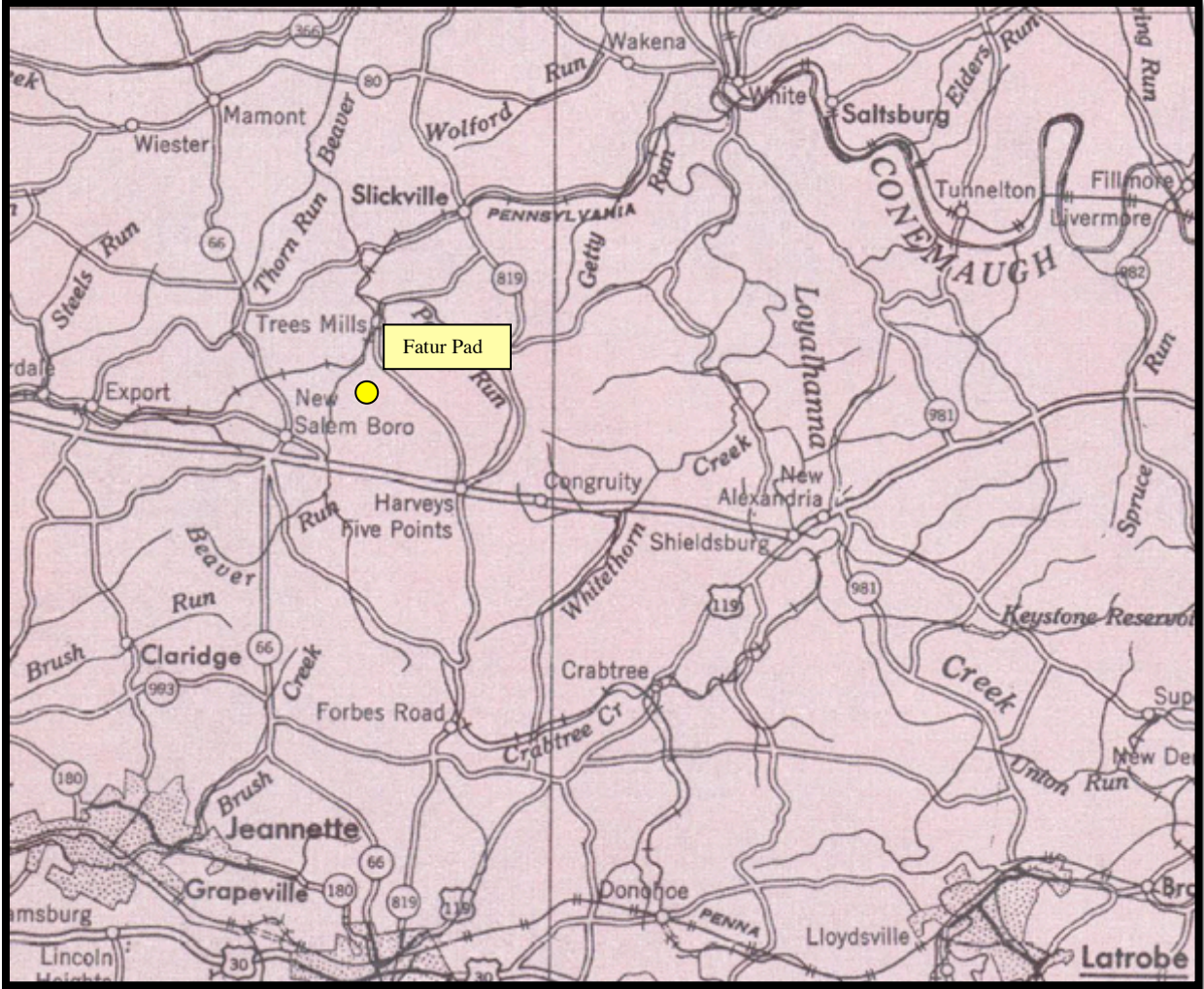
SPECIFIC COAL SEAM MAPPING (Middle Kittanning Seam)



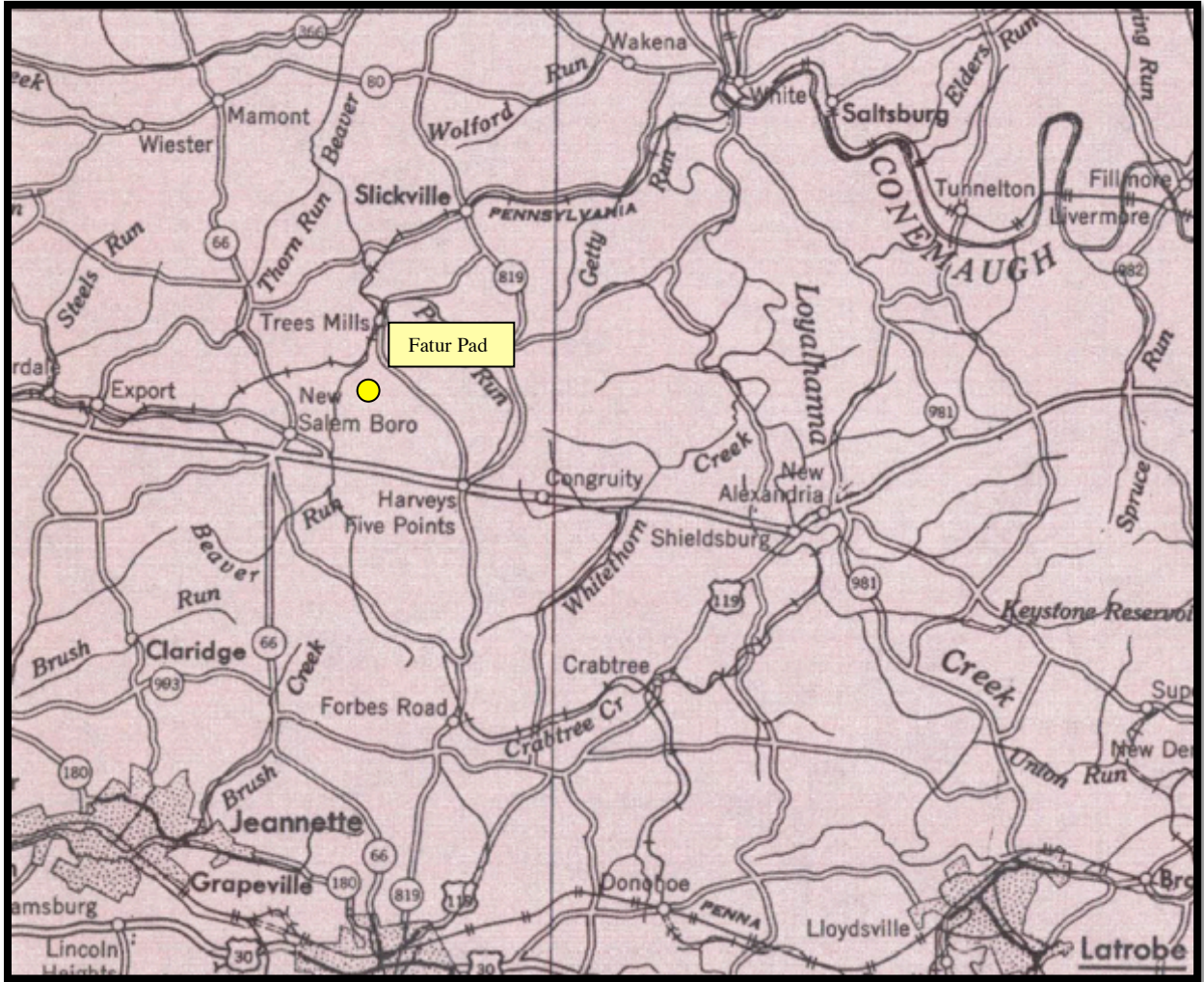
SPECIFIC COAL SEAM MAPPING (Lower Kittanning Seam)



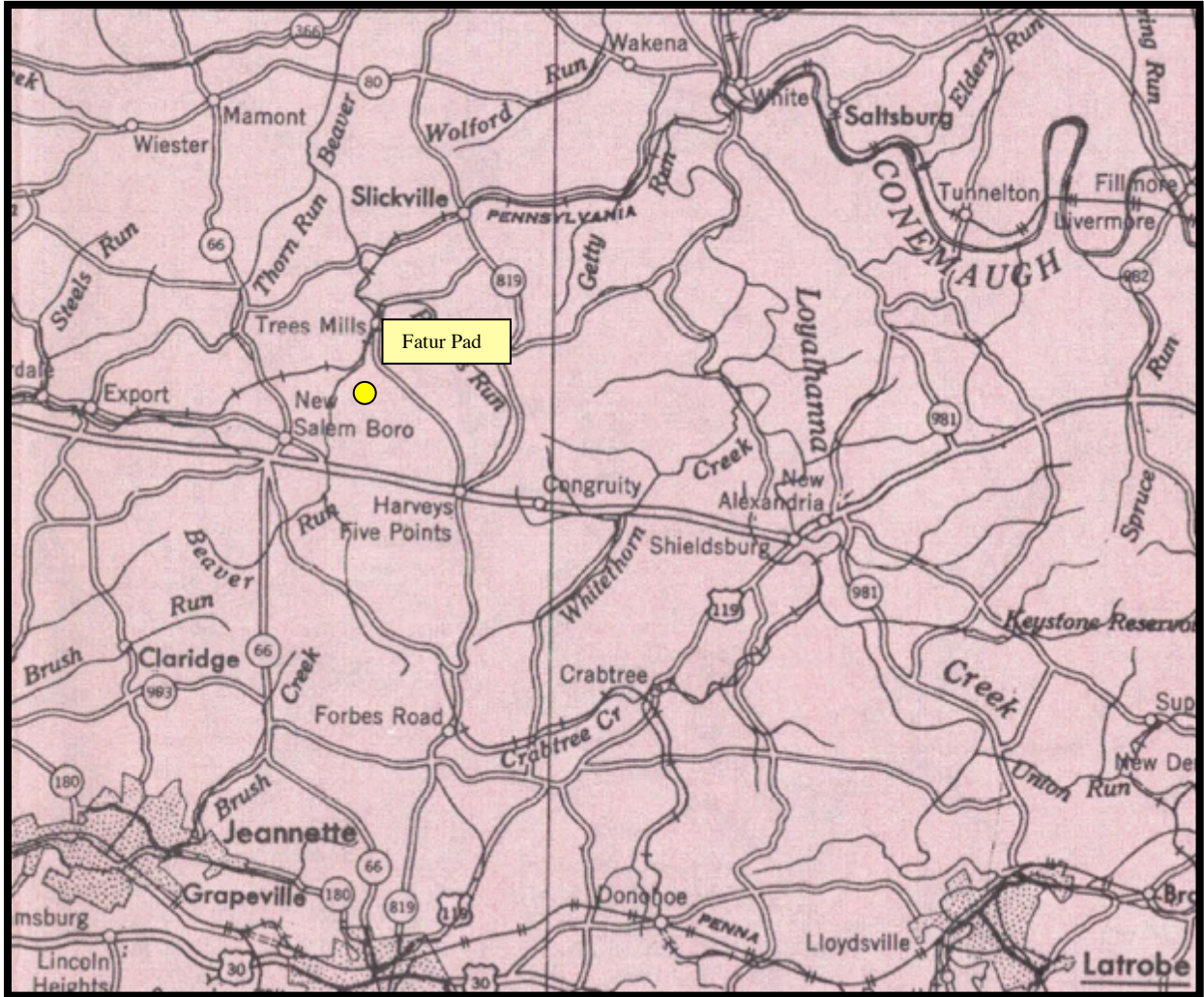
SPECIFIC COAL SEAM MAPPING (Clarion Seam)



SPECIFIC COAL SEAM MAPPING (Brookville Seam)



SPECIFIC COAL SEAM MAPPING (Upper Mercer Seam)



## DISCUSSION

Workable coal seams in western Pennsylvania are well-documented and generally limited to strata above the base of the Allegheny Formation. Best available geologic mapping as shown on the so-titled preceding report page copied from PA Geologic Survey Mineral Resources Report 94 places the surficial geology at this well pad below the Pittsburgh coal seam, within the Conemaugh Group. Regional structural mapping based on bottom of coal elevations of the Pittsburgh coal seam suggests that the base of the Pittsburgh should occur at approximately 1370' +MSL here. The approximate surface elevation of this pad is  $\pm 1345'$ , placing it roughly 25' below this seam had it not been previously removed by erosional processes.

In PA Geo. Survey's Special Publication 1 "The Geology of Pennsylvania", page 155 states: "Coals in the Conemaugh, with local exceptions, are generally sparse, thin, and economically unimportant". This generic statement corresponds with the lack of specific seam maps for any of the Conemaugh coals in PA Geologic Survey Mineral Resources Report 68 "Bituminous Coal Resources in Western Pennsylvania", as they are not considered historically exploitable coal horizons. In concordance with that assessment and the stratigraphic position of this pad area, individual seam characterization maps of the Upper Freeport coal and underlying potentially workable seams for this location have been derived from Mineral Resources Report 68 and are displayed in preceding pages. A review of these references shows all seams either measured/indicated less than 28" thick or designated as inferred, i.e. as only possibly present at the well location.

Based on this information, a determination as a **NON-COAL** site is indicated for the subject well pad.