

Attachment B

**2018 Exploratory Diamond-Core-Hole Drilling Program
Borehole Cam023_0581
Bureau of Topographic and Geologic Survey
Pennsylvania Department of Conservation and Natural Resources
State Game Lands 293
Rathbun 7.5-Minute Quadrangle, Cameron County, Pennsylvania**

Drill-Hole Site Description and Location Map

Note: This attachment contains a site description and location map for one (1) proposed exploratory core hole to be completed in 2018 in State Game Lands 293, Rathbun 7.5-minute topographic quadrangle, Shippen Township, western Cameron County. To assist prospective Bidders in understanding the probable subsurface geology and drilling conditions to be encountered, descriptions of the likely geologic formations and rock types to be penetrated by the borehole are included. These descriptions (assessments) are a reasonable attempt by the Department to provide objective geologic information about the work site. As such, they should be considered average probable conditions for the drill hole, including estimated footages, and should not be considered guarantees. Unanticipated rock types and/or drilling conditions may occur at the drill-hole site.

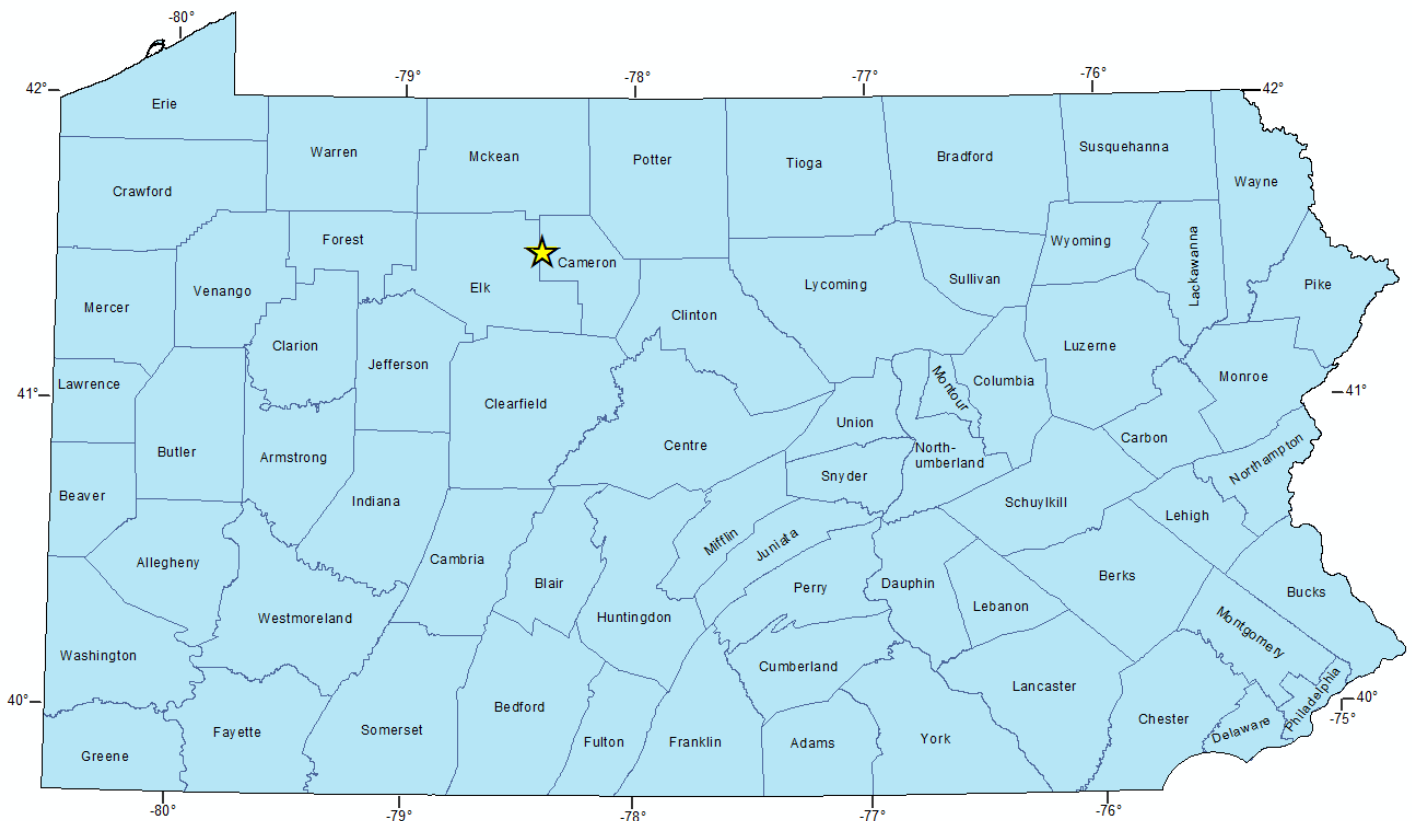


Figure 1: Location of drill site in reference to the state of Pennsylvania

Drilling Site 1 (Borehole MCK083_0406)

LOCATION:

Drilling will occur at one site within State Game Lands 293, Shippen Township, Cameron County.

Location coordinates: X (longitude) = -78.40765°, Y (latitude) = 41.50019°

Directions: From Emporium where the Driftwood Branch Sinnemahoning Creek crosses State Route 120, take State Route 120 west for 7.30 miles. Turn right onto Beechwood Road and travel 1.86 miles. Turn right onto gated, gravel-access road at Reed Hollow. Travel 1.62 miles north on access road till top of mountain. Turn right at top of mountain onto a gated dirt road for 0.26 miles. The logging pad in which the drilling would occur is directly on the north-side of road (Figure 2). A map of State Game Lands 293 with the drill location is located on Figure 3, on the last page of this document.



Figure 2: Panorama view of the proposed drill site.

Anticipated Total Depth: 1,400 feet.

Water Availability: Water will have to be hauled by truck to the work site, and the recommended sources include West Creek or the junction of Reed Hollow Run with Reed Hollow Road. Travel distance is approximately 1.9 miles from the drill site.

Geologic Setting: The drill hole will begin in the lower Pottsville Formation, continue through the entire Knapp/Oswayo Formations (undivided), the entire Catskill Formation, and end in the Chadakoin/Lock Haven Formations (undivided). The rocks are approximately horizontal. No unusual subsurface conditions (e.g., no very hard sandstones, faulting, or natural gas) are anticipated that would require special handling or drilling procedures. The hole will start below the coal measures, so no workable coals or mine voids will be encountered.

The Pottsville Formation is estimated to be less than 50 feet thick (from a depth of 0 to 50 feet in borehole) and composed dominantly of light gray sandstone and quartz pebble conglomerate. Minor stringers of coal and shale are possible. All of the quartz-rich rocks cut well.

The Knapp Formation/Oswayo Formation (undivided) is estimated to be about 520 feet thick (from a depth 50 feet to 570 feet in borehole) and composed of interbeds of olive-gray shale and medium-gray sandstone with minor amounts of olive-gray to dark gray sandy, fossiliferous limestone. Sandstones intervals range from a few

inches up to 15 feet thick. Shale intervals range from a few inches up to 50 feet thick. Sandy fossiliferous limestone is commonly less than a foot thick but may reach up to five feet thick. Conglomerate intervals commonly range from a few inches up to three feet thick and would likely be encountered in the upper half of the formation. Sandstone and conglomerate should core well with moderate drilling speed. Shale should core well and fast drilling speeds. Limestone should core well with moderate or slightly slower drilling speeds.

The Catskill Formation is estimated to be 445 feet (from a depth of 570 to 1015 feet in drill hole). The Catskill consists of interbedded gray to greenish-gray and red sandstone, and red siltstone, silty shale, and claystone. Sandstone intervals were observed up to 25 feet thick and shale intervals were observed up to 30+ feet thick. Drilling speed are generally very good, but some of the softer red units drill and recover more easily if drilling speed and water pressure are cut back slightly.

Drilling is expected to end in the Chadakoin/Lock Haven Formations (undivided) (from a depth of 1015 to 1400 feet). The Chadakoin Formation and Lock Haven Formation are expected to interfinger in this area. the Lock Haven Formation is medium-gray to greenish-gray shale and subordinate interbeds of gray sandstone and conglomerate; sandstone intervals estimated to be less than 10 feet thick. Sandstones may bear minor amounts of natural gas. Chadakoin Formation bears medium gray to grayish red shale and sandstone. A tongue of Chadakoin is expected in the basal 85 feet of the corehole. Drilling speeds expected to be good.

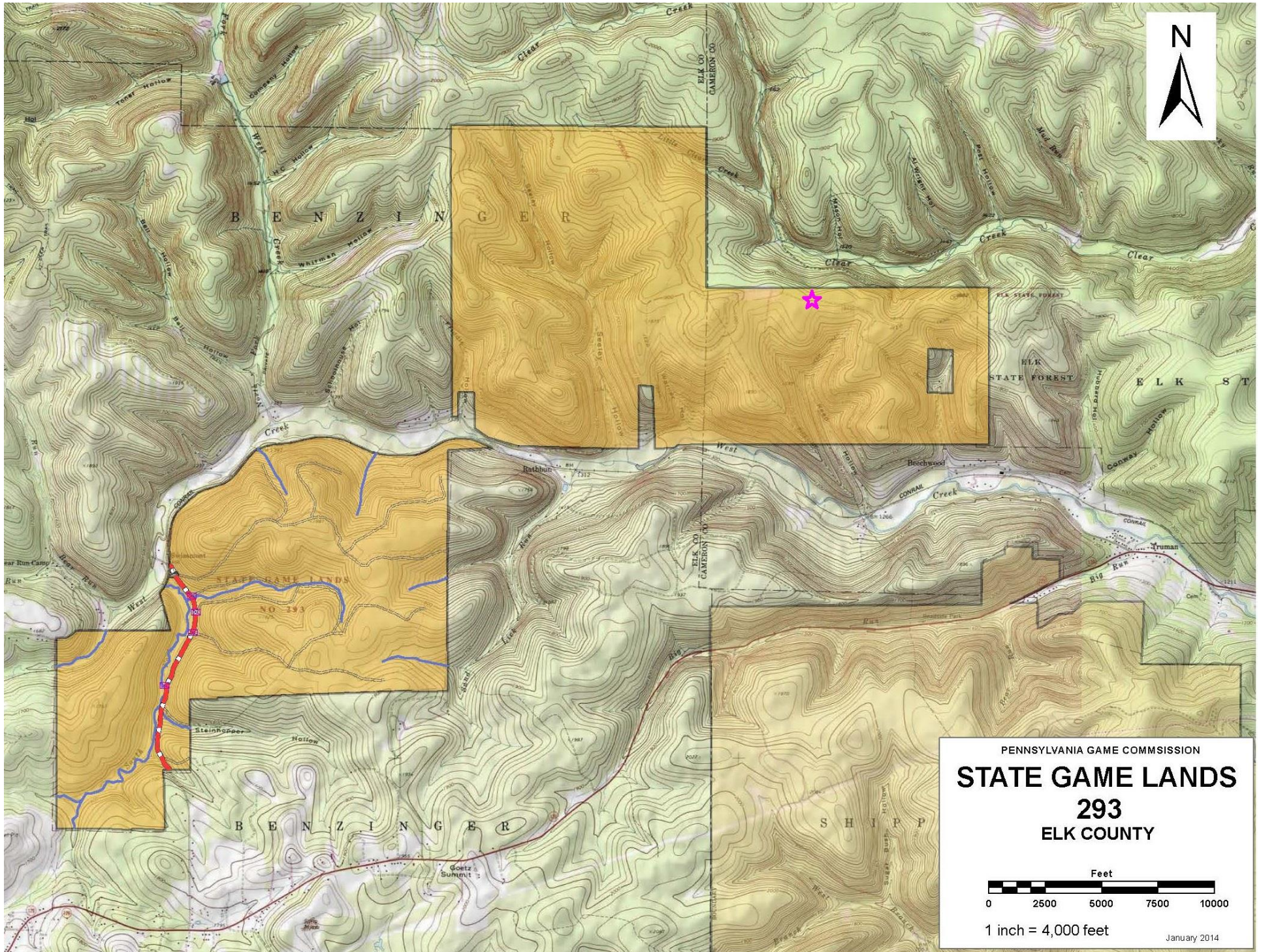


Figure 3: State Game Lands 293 and surrounding area. Drill site location is the pink star.