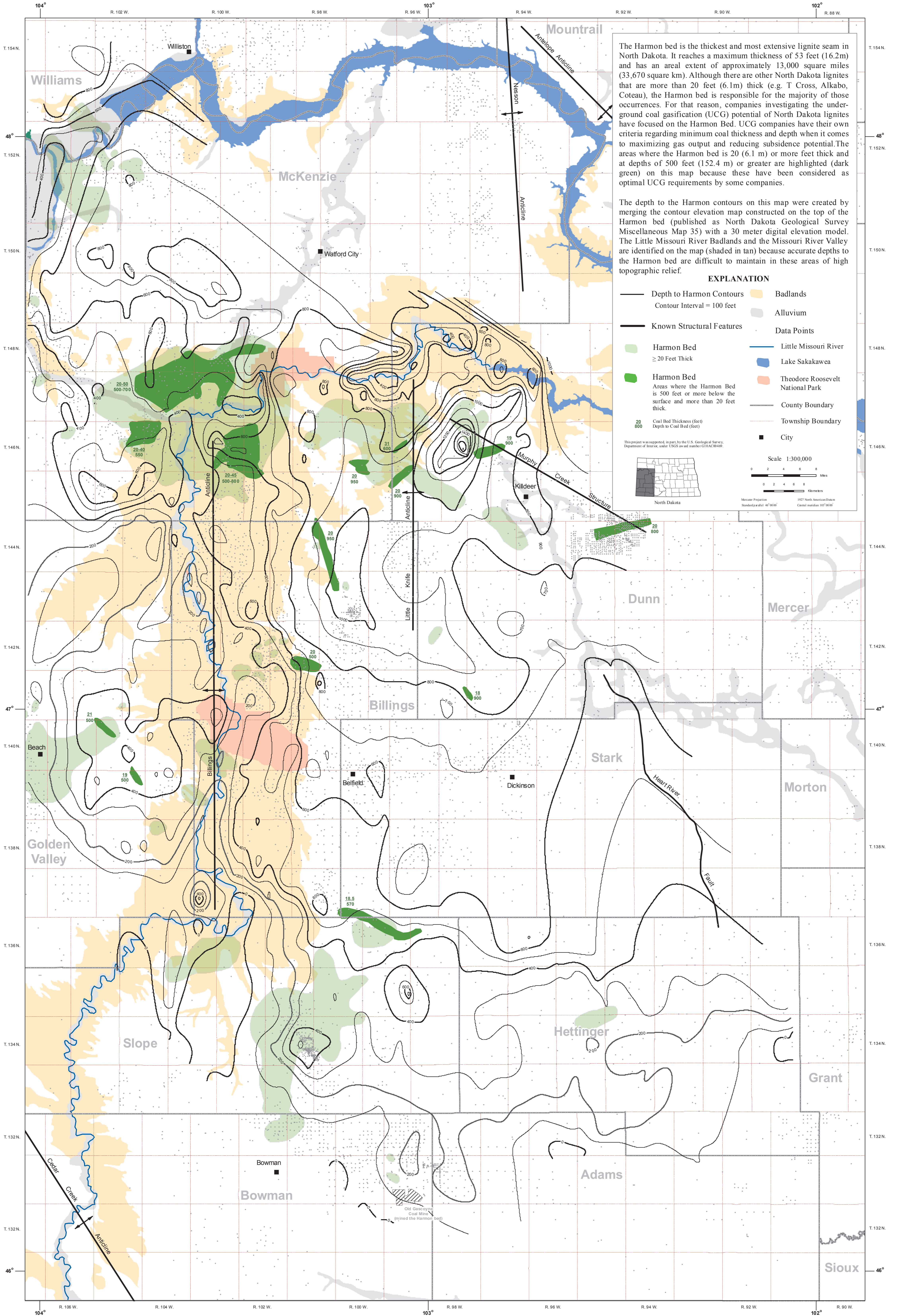
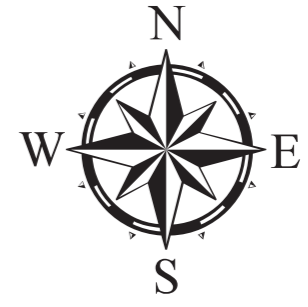




# Depth to the Harmon Bed

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The Harmon bed is the thickest and most extensive lignite seam in North Dakota. It reaches a maximum thickness of 53 feet (16.2m) and has an areal extent of approximately 13,000 square miles (33,670 square km). Although there are other North Dakota lignites that are more than 20 feet (6.1m) thick (e.g. T Cross, Alkabo, Coteau), the Harmon bed is responsible for the majority of those occurrences. For that reason, companies investigating the underground coal gasification (UCG) potential of North Dakota lignites have focused on the Harmon Bed. UCG companies have their own criteria regarding minimum coal thickness and depth when it comes to maximizing gas output and reducing subsidence potential. The areas where the Harmon bed is 20 (6.1 m) or more feet thick and at depths of 500 feet (152.4 m) or greater are highlighted (dark green) on this map because these have been considered as optimal UCG requirements by some companies.

The depth to the Harmon contours on this map were created by merging the contour elevation map constructed on the top of the Harmon bed (published as North Dakota Geological Survey Miscellaneous Map 35) with a 30 meter digital elevation model. The Little Missouri River Badlands and the Missouri River Valley are identified on the map (shaded in tan) because accurate depths to the Harmon bed are difficult to maintain in these areas of high topographic relief.

**EXPLANATION**

Depth to Harmon Contours Contour Interval = 100 feet	Badlands
Known Structural Features	Alluvium
Harmon Bed ≥ 20 Feet Thick	Little Missouri River
Harmon Bed Areas where the Harmon Bed is 500 feet or more below the surface and more than 20 feet thick.	Lake Sakakawea
 20-50 500-700 20-40 550 20-45 500-800 20 950 31 600 19 900 20 900 20 900 20 950 20 900 20 900 20 950 18 900 18.5 570	Theodore Roosevelt National Park
City	County Boundary
Township Boundary	City

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Scale 1:300,000

0 2 4 6 8 Miles

0 2 4 6 8 Kilometers

North Dakota

Map Projection: NAD 83 North American Datum  
Standard Parallel: 46° 30' 00"  
Central Meridian: 102° 00' 00"