

Cement Rock Mineral Resources Shawnee - McCanna Area Grand Forks County, North Dakota

Fred J. Anderson
2005

CEMENT ROCK MINERAL RESOURCES MINERAL EXTRACTION AND PLANNING

Cement rock mineral resources information obtained from test drilling (Carlson, 1964) and the relationships of current land use, vegetative cover, local hydrology and existing major transportation routes are shown as depicted from 1993 Digital Color Orthophotography in the vicinity of the Shawnee - McCanna areas, Grand Forks County, North Dakota and are depicted on this map at a scale of 1:24,000. The prospect boundary area as outlined by Carlson (1964) is delineated in blue and covers an area of approximately 17,280 acres (27 square miles). The locations of drillholes are shown in their approximated locations as obtained from Carlson (1964). A set of overburden thickness contours is also shown which delineates areas of uniform overburden thickness across the mineable portion of the study area. These overburden thickness contours have been extended outside of the traditional prospect area as defined by Carlson (1964) in order to estimate the continued possible extents and thicknesses of overburden. Overburden is defined here as the sum of the thickness, in feet, of glacial drift plus the drilled thickness of the Cretaceous Niobrara Formation to the top of the "high lime zone" as interpreted by Carlson (1964). The thickness of overburden increases from the northeast to the southwest at a rate of approximately 21 feet per mile.

EXPLANATION

Geologic Symbols

A — A' Geologic X-section

- S-1 ● 22/40/62 Drill hole location.
- S-1: Drillhole ID number.
- 10/48: High lime zone thickness (in feet)/overburden thickness (in feet).
- 22/40/62: Glacial drift thickness (in feet)/Niobrara Formation thickness (in feet)/total drill hole depth.

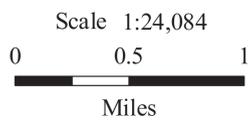
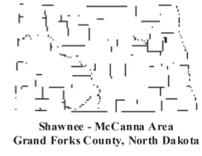
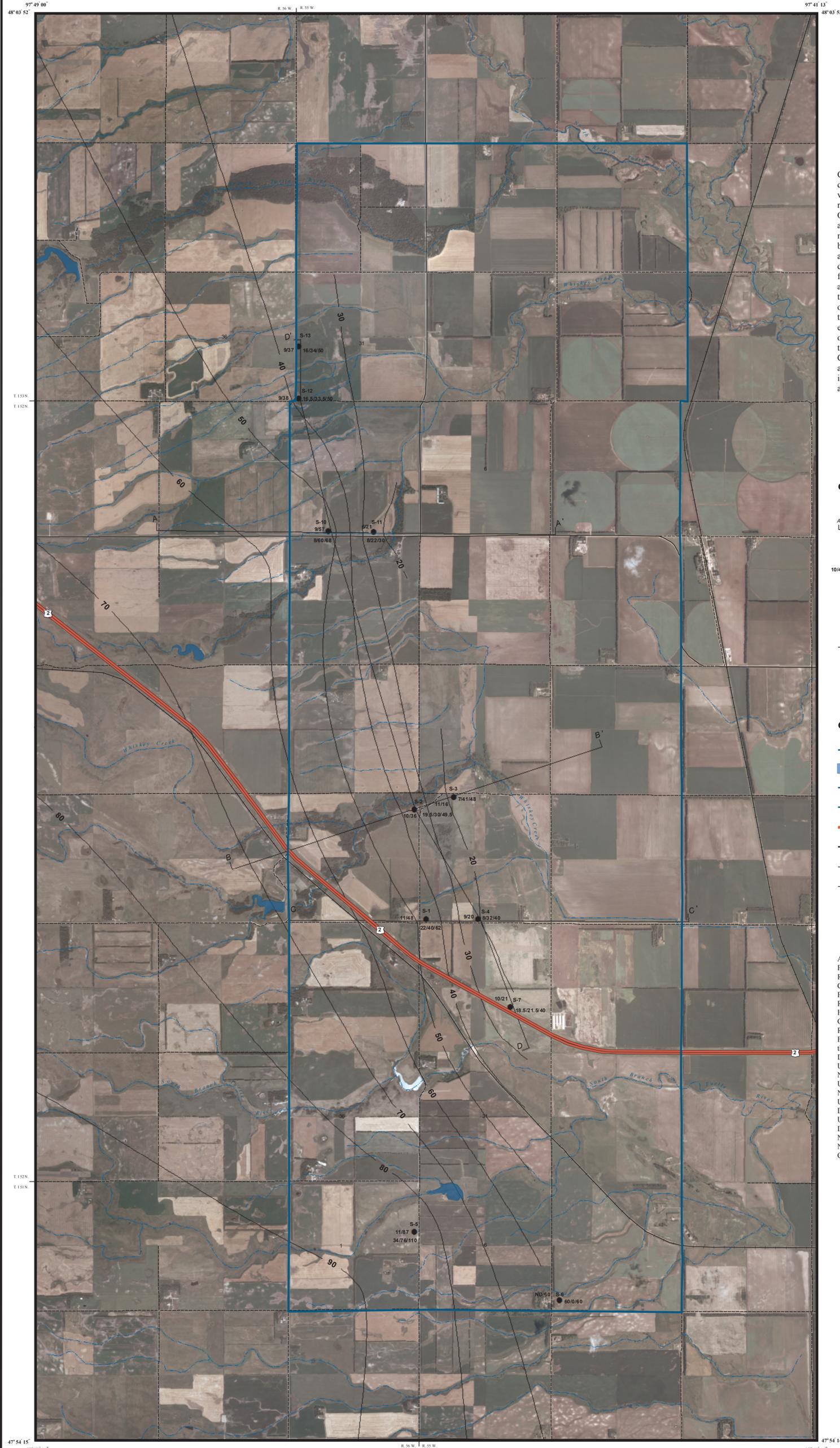
— 50 — Overburden thickness isopach delineates areas of equal material thickness in feet. Contour interval is equal to ten feet. Overburden includes glacial drift thickness and Niobrara Formation thickness to the top of the Carlson (1960) "high lime zone".

Other Features

- Extent of Prospect Area
- Water
- Stream
- Stream/Intermittent
- US Highway
- Paved Road
- Unpaved Road
- Railroad

REFERENCES

- Anderson, S.B., and Haraldson, H.C., 1968, Cement Rock Possibilities in Paleozoic Rocks of Eastern North Dakota, North Dakota Geological Survey, Report of Investigations No. 48, 62 p.
- Carlson, C.G., 1964, The Niobrara Formation of Eastern North Dakota; Its Possibilities For Use As a Cement Rock, North Dakota Geological Survey, Report of Investigations 41, 56 p.
- Hansen, D.E., and Kume, J., 1970, Geology and Ground Water Resources of Grand Forks County, Bulletin 53, North Dakota Geological Survey, 76 p.
- Reiskind, J.R., 1986, Paleontology and Stratigraphy of the Niobrara Formation (Upper Cretaceous) of Eastern North Dakota with Emphasis on the Calcareous Nanoplankton, University of North Dakota, PhD Dissertation.
- USGS, 1963, Topographic Map of the Fordville SE Quadrangle, 1:24,000, North Dakota, Grand Forks County.
- USGS, 1963, Topographic Map of the Larimore West Quadrangle, 1:24,000, North Dakota, Grand Forks County.
- USGS, 1963, Topographic Map of the Niagara Quadrangle, 1:24,000, North Dakota, Grand Forks County.
- USGS, 1963, Topographic Map of the Orr Quadrangle, 1:24,000, North Dakota, Grand Forks County.
- NRCS, 1993, NAIP Digital Color Orthophotography, 1 meter resolution, National Resource Conservation Service, North Dakota, Grand Forks County.



Lambert Conformal Conic Projection
1927 North American Datum
Standard Parallels 47° 52' 30\"/>



The North Dakota Geological Survey compiled this map according to conventional cartographic standards, using what is thought to be the most reliable information available. The North Dakota Geological Survey does not guarantee freedom from errors or inaccuracies and disclaims any legal responsibility or liability for interpretations made from the map, or decisions based thereon.