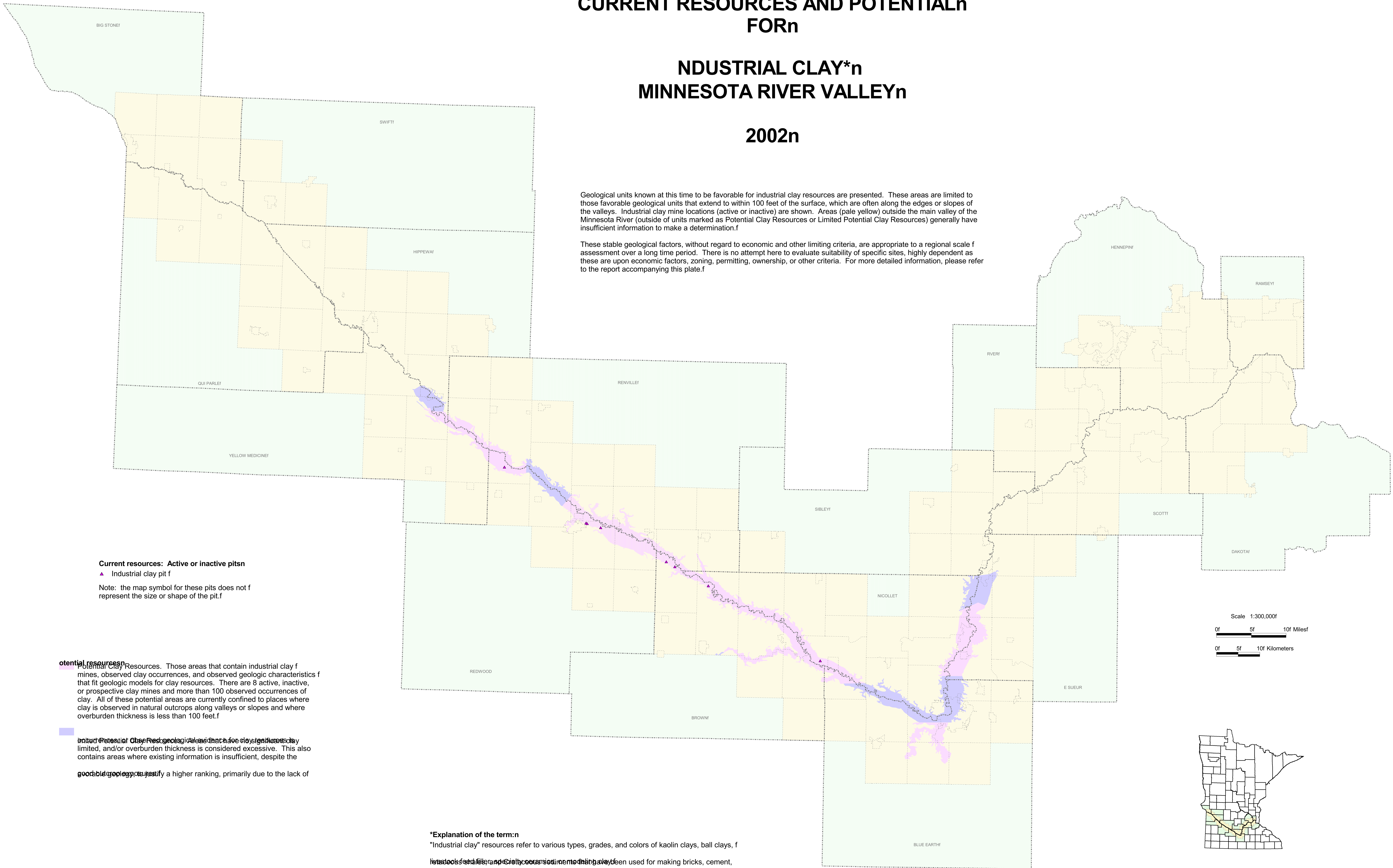


# CURRENT RESOURCES AND POTENTIAL FOR INDUSTRIAL CLAY\* MINNESOTA RIVER VALLEY 2002

Geological units known at this time to be favorable for industrial clay resources are presented. These areas are limited to those favorable geological units that extend to within 100 feet of the surface, which are often along the edges or slopes of the valleys. Industrial clay mine locations (active or inactive) are shown. Areas (pale yellow) outside the main valley of the Minnesota River (outside of units marked as Potential Clay Resources or Limited Potential Clay Resources) generally have insufficient information to make a determination.

These stable geological factors, without regard to economic and other limiting criteria, are appropriate to a regional scale assessment over a long time period. There is no attempt here to evaluate suitability of specific sites, highly dependent as these are upon economic factors, zoning, permitting, ownership, or other criteria. For more detailed information, please refer to the report accompanying this plate.



**Current resources: Active or inactive pits**

▲ Industrial clay pit  
 Note: the map symbol for these pits does not represent the size or shape of the pit.

**Potential resources**

Potential Clay Resources. These areas that contain industrial clay mines, observed clay occurrences, and observed geologic characteristics that fit geologic models for clay resources. There are 8 active, inactive, or prospective clay mines and more than 100 observed occurrences of clay. All of these potential areas are currently confined to places where clay is observed in natural outcrops along valleys or slopes and where overburden thickness is less than 100 feet.

Limited Potential Clay Resources. These areas that have clay resources that are limited, and/or overburden thickness is considered excessive. This also contains areas where existing information is insufficient, despite the good geologic potential to justify a higher ranking, primarily due to the lack of

**\*Explanation of the term:**  
 "Industrial clay" resources refer to various types, grades, and colors of kaolin clays, ball clays, feldspathic clays, and specialty clays that have been used for making bricks, cement,

Boica, W.C., Oreskovich, J.A., Heine, J.J., Grant, J.A., Hauck, S.A., and Setterholm, D.R., 1998, Mapping Industrial Clay Potential in the Minnesota River Valley, University of Minnesota - Duluth, Natural Resources Research Institute Report NRR/IRI-98/03. [Arcview shapefiles and data tables in dBase and Access formats]

Minnesota Department of Natural Resources, Management Information Systems Bureau, 1998, Geomorphology of Minnesota, scale 1:100,000. [Arc/INFO export file available for download from the DNR Data Deli (deli.dnr.state.mn.us)]  
 Note: the boundary of the industrial clay potential was defined by this layer as a way of showing the approximate location of the Minnesota River Valley.

Pits reference:  
 Gran, S., 1997, Mine Pits in the Minnesota River Valley Corridor, Minnesota Geological Survey, based on 1991 aerial photography. [Arcview shapefiles]

Base map data sources:  
 Minor Civil Divisions (cities and townships) from the 1990 TIGER line files.