ERA	SYSTEM AND SERIES	FORMATION OR GROUP NAME	LITHOLOGY	MODEL HYDROSTRATIGRAPHIC UNITS	MODEL LAYER
LATE CENOZOIC	QUATERNARY	TERRACE DEPOSITS	SILT, SAND, & GRAVEL	UPPER GLACIAL DRIFT AQUIFER	LAYER 1
		DES MOINES LOBE TILL	UNCONSOLIDATED CLAY AND SILT	SEPARATING AQUITARD	
		SUPERIOR LOBE OUTWASH AND TILL	UNCONSOLIDATED SAND & GRAVEL	LOWER GLACIAL DRIFT AQUIFER	
EARLY PALEOZOIC	MIDDLE ORDIVICIAN	BEDROCK VALLEY TILL	LIMESTONE & SILTSTONE		
		PLATTEVILLE FORMATION	FINE TO MEDIUM GRAINED SANDSTONE WITH SHALE LAYERS NEAR BASE		
		ST. PETER SANDSTONE		ST. PETER–BASAL TILL AQUITARD	
	LOWER ORDIVICIAN	PRAIRIE DU CHIEN GROUP	LIMESTONE & DOLOMITE WITH SHALE LAYERS	PRAIRIE DU CHIEN AQUIFER	LAYER 2
	UPPER CAMBRIAN	JORDAN SANDSTONE	MEDIUM–GRAINED SANDSTONE WITH SHALE	JORDAN AQUIFER	LAYER 3
		ST. LAWRENCE FORMATION	DOLOMITIC SHALE & SILTSTONE	FRANCONIA–ST. LAWRENCE AQUITARD	NOT SIMULATED
		FRANCONIA FORMATION	GLAUCONITIC SANDSTONE WITH SHALE & DOLOMITE		
		IRONTON & GALESVILLE SANDSTONES	GLAUCONITIC SANDSTONE & SHALE	IRONTON–GALESVILLE AQUIFER	
		EAU CLAIRE FORMATION	SILTSTONE, SHALE & SILTY SANDSTONE	EAU CLAIRE CONFINING UNIT	
		MT. SIMON SANDSTONE	SANDSTONE & SHALE	MT. SIMON–HINCKLEY AQUIFER	
MIDDLE PROTEROZOIC, UNDIVIDED			VOLCANIC AND CRYSTALINE ROCK	NOT APPLICABLE	

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Sand & Gravel Mining and Accessory Uses

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Empire Township

Figure 9R
Stratigraphic Column for Dakota County