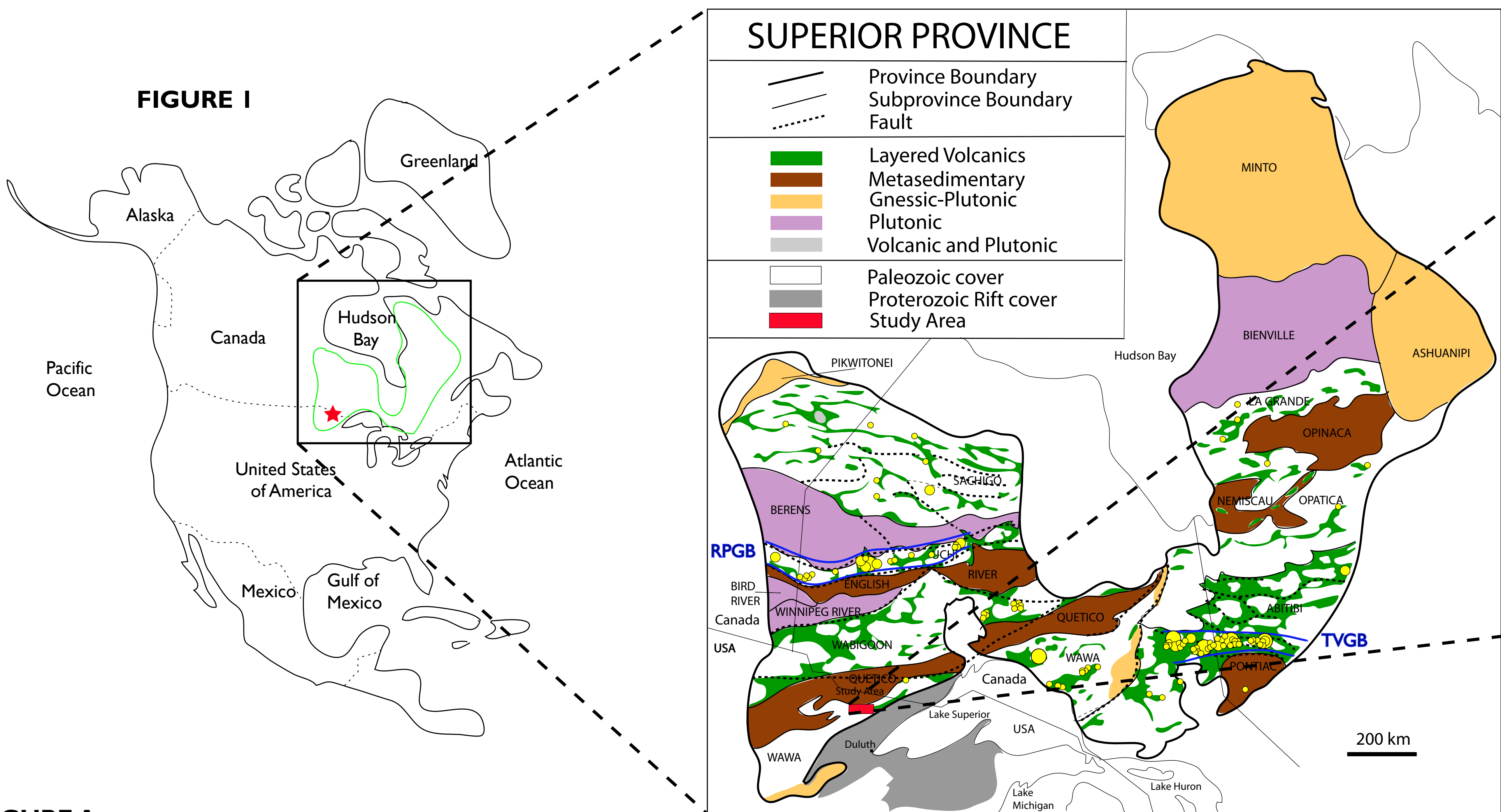
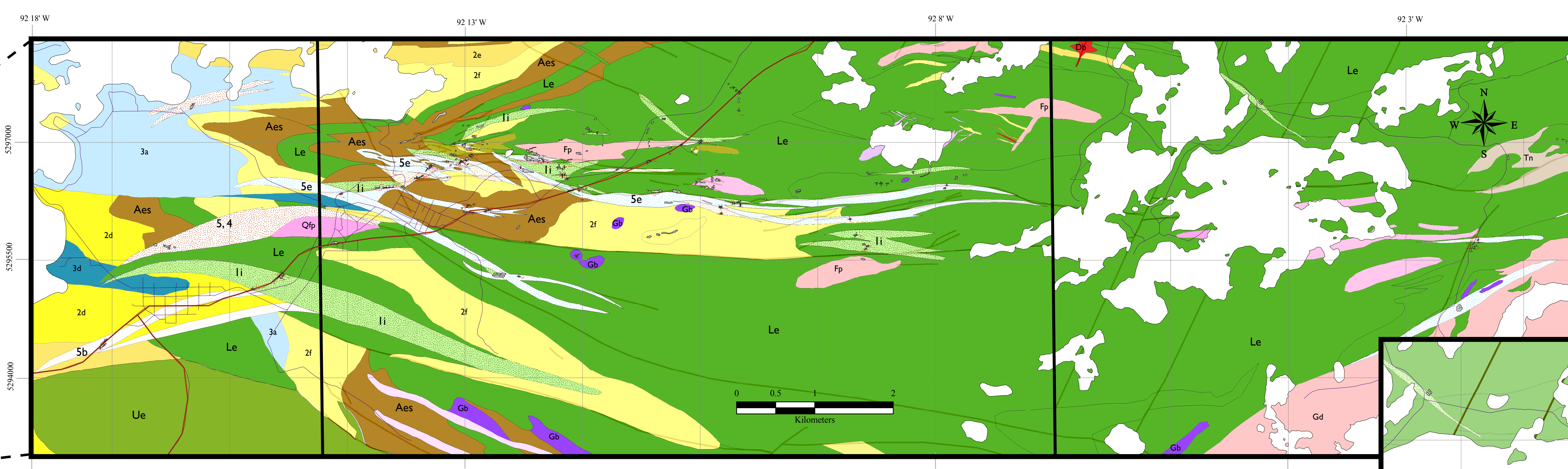


# Plate I: Geologic and Kinematic Maps of the Murray Shear Zone, northeast Minnesota



**FIGURE A**  
Simplified regional context map of the study area illustrating major (>3 t Au) gold deposits within major subprovinces of the Superior craton. Note the cluster of gold deposits within two significant belts; RPGB and TVGB, which account for 75% of Canadian gold production. Modified from Robert et al. (2005).



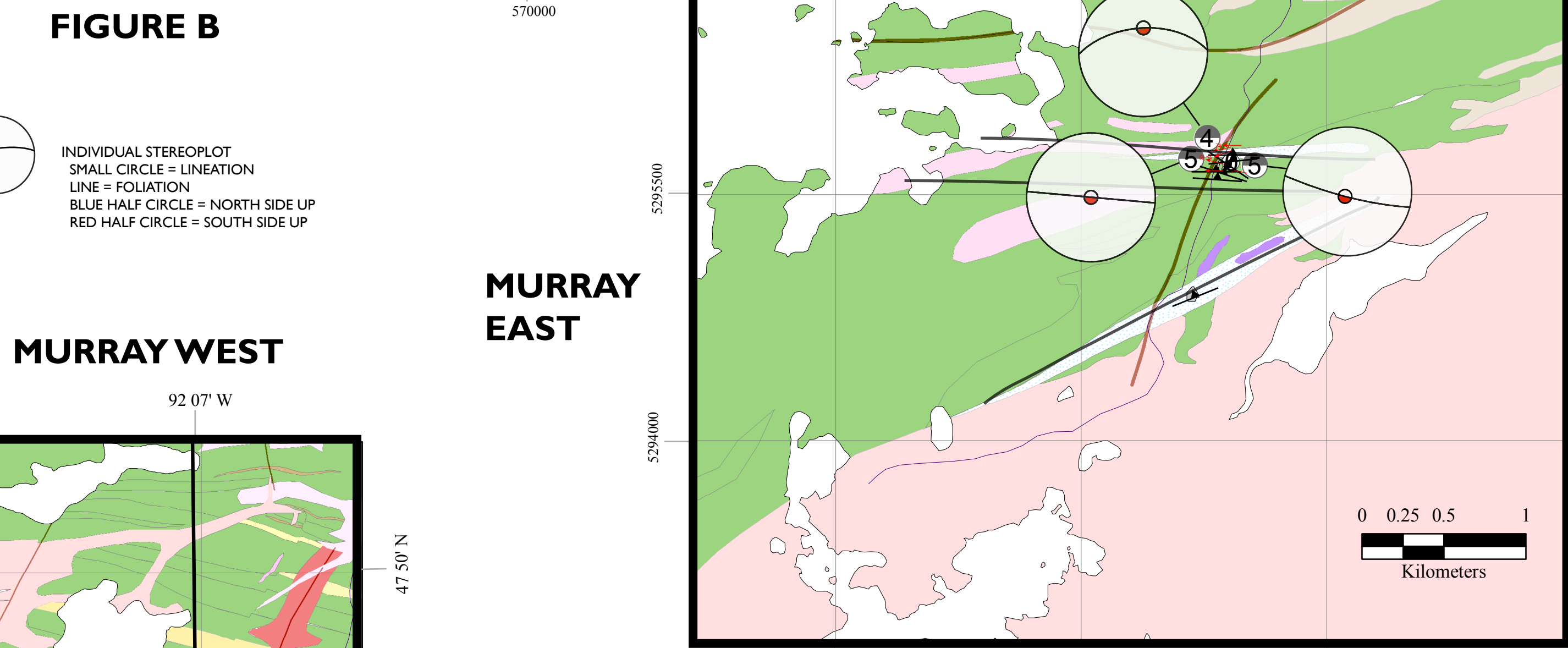
**GEOLOGIC UNITS**

SHEARED ROCKS	MAFIC VOLCANIC ROCKS	INTRUSIVE ROCKS	FELSIC VOLCANIC ROCKS
Li: Foliated Basalt	Le: Lower Ely Greenstone	Tn: Tonalite	2a: Massive lava flows
S: BIF Schist	Ue: Upper Ely Greenstone	Fp: Feldspar Porphyry	2b: Tuff breccia
Ch: Chlorite Schist		QFP: Quartz Feldspar Porphyry	2c: Tuff and light tuff
As: Ankerite Schist		Gd: Granodiorite	2d: Epilastic deposits
Sr: Sericite Schist		D: Diabase	2e: Cherry ash tuff and greywacke
		G: Gabbro	
		Di: Diabase	
			<b>CLASTIC SEDIMENTARY ROCKS</b>
			3a: Conglomerate

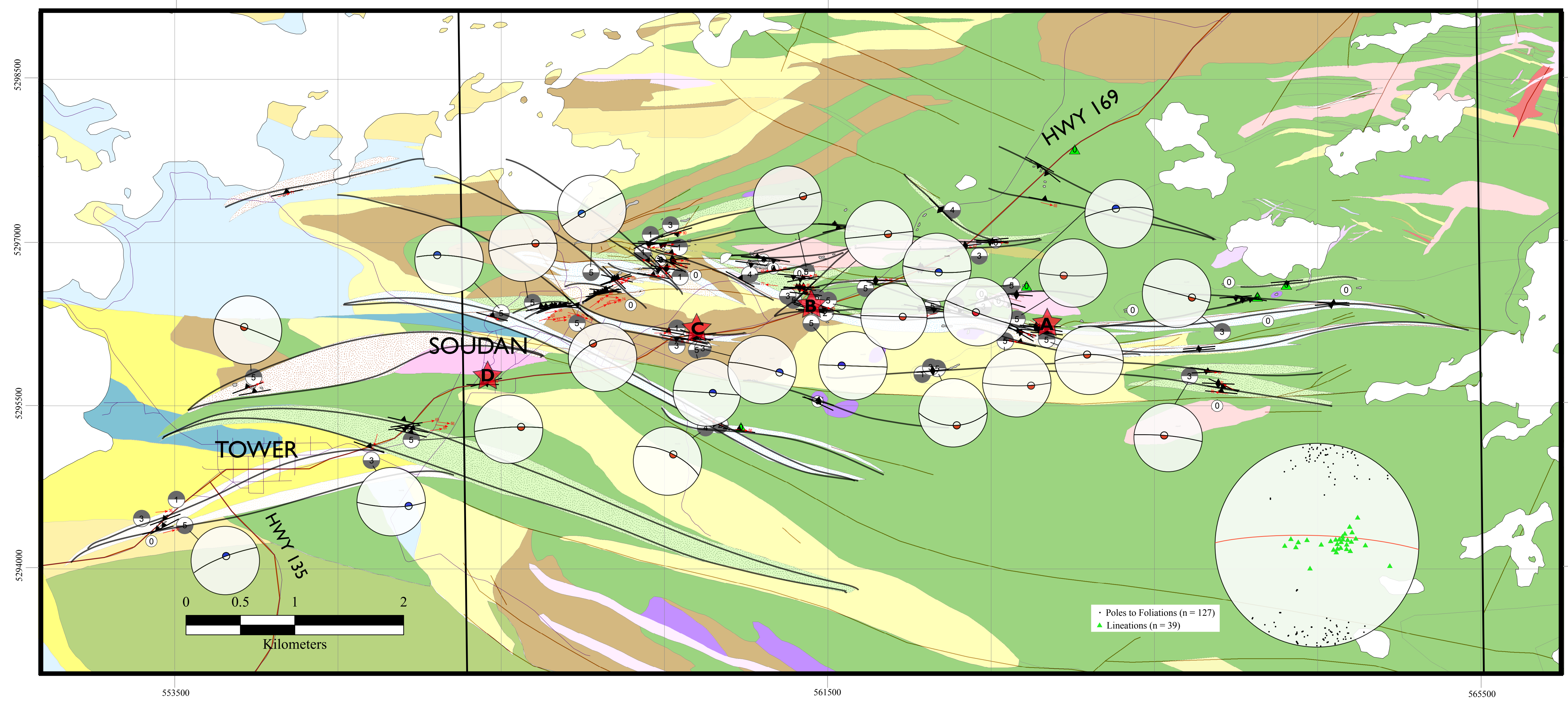
\*Map unit abbreviations from Peterson and Pazelke, 2003.

**MAP SYMBOLS**

- ★ LOCATION OF GEOCHEMICAL SAMPLES
- ↖ FOLIATION
- ↖ FOLIATION-VERTICAL
- ↖ LINEATION (with plunge)
- ↖ OUTCROP
- ↖ FOLIATION TRAJECTORY
- ↖ KINEMATIC SYMBOL
- White = side up
- Grey = side down
- Numerical = confidence level (1-5, 5 = most confident)



**FIGURE B**  
Geologic map of the Murray Shear Zone (MSZ), St. Louis County, northeastern MN. Schistose bands anastomose through Lower and Upper Ely Greenstone, Soudan Iron Formation, and eastern portions of Lake Vermilion Formation. Intrusive rocks exist throughout the study area in general conformance with MSZ structure (slight penetrative foliation similar to that of schistose bands), which may represent late intrusion during the MSZ deformation event (Peterson and Patelke, 2003). Map divides into MSZ East and MSZ West for clarity.



**PLATE I: GEOLOGIC AND KINEMATIC MAPS OF THE MURRAY SHEAR ZONE, NORTHEAST MINNESOTA**

THOMAS K. JOHNSON

OCTOBER, 2009