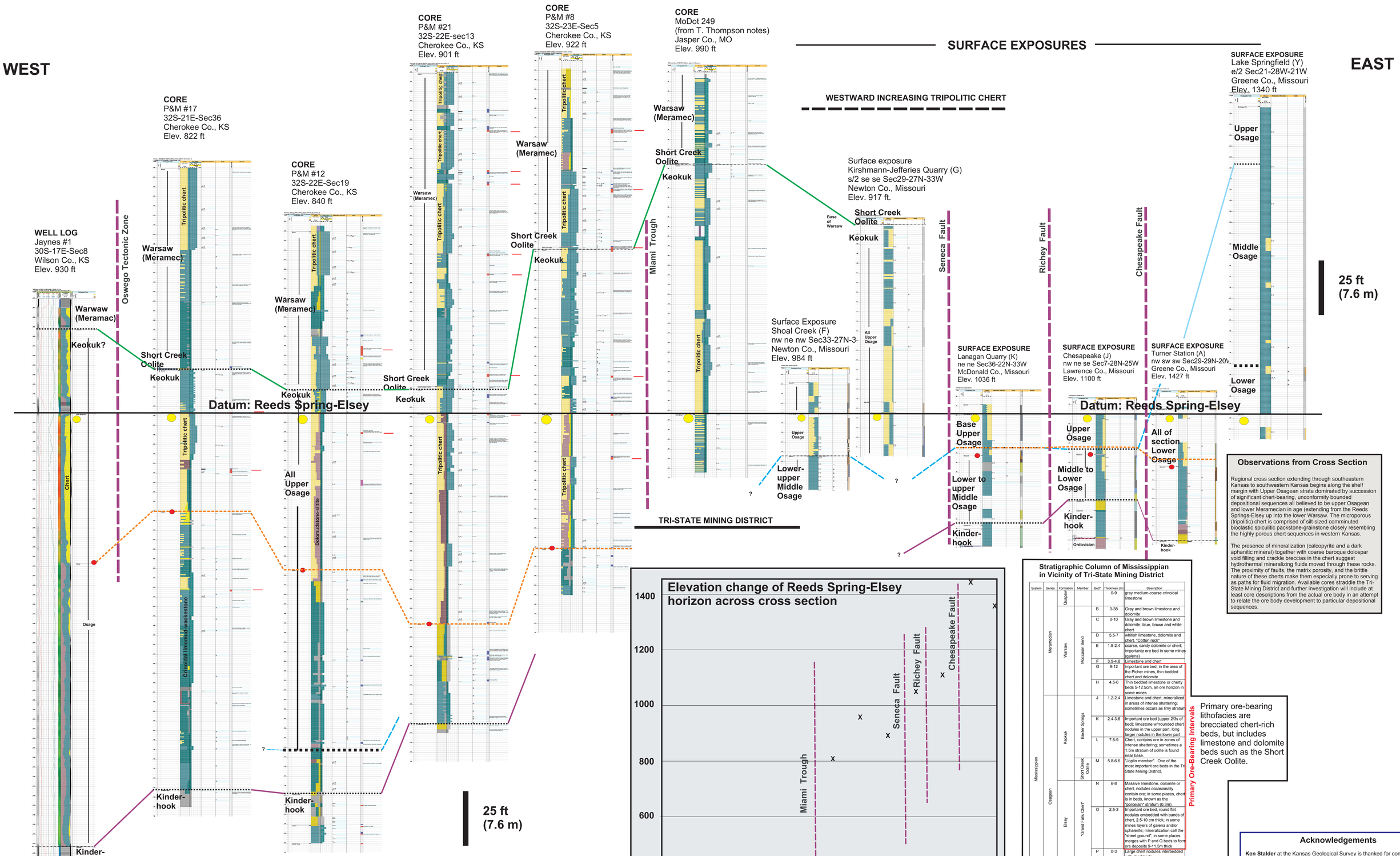

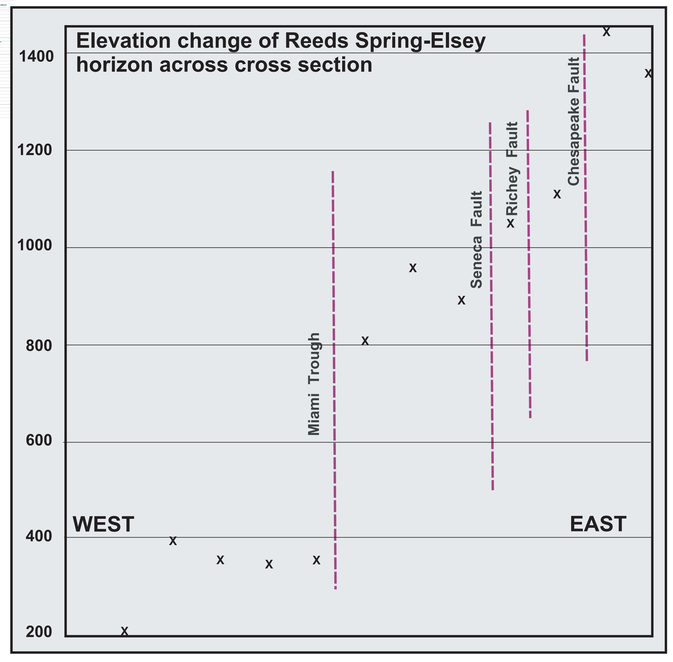

Observations from Cross Section

Regional cross section extending through southeastern Kansas to southwestern Kansas begins along the shelf margin with Upper Osagean strata dominated by succession of significant chert-bearing, unconformity bounded depositional sequences all believed to be upper Osagean and lower Meramecian in age (extending from the Reeds Springs-Elsey up into the lower Warsaw. The microporous (tripolitic) chert is comprised of silt-sized comminuted bioclastic spiculitic packstone-grainstone closely resembling the highly porous chert sequences in western Kansas.

The presence of mineralization (calcopyrite and a dark aphanitic mineral) together with coarse baroque dolospar void filling and crackle breccias in the chert suggest hydrothermal mineralizing fluids moved through these rocks. The proximity of faults, the matrix porosity, and the brittle nature of these cherts make them especially prone to serving as paths for fluid migration. Available cores straddle the Tri-State Mining District and further investigation will include at least core descriptions from the actual ore body in an attempt to relate the ore body development to particular depositional sequences.

Stratigraphic Column of Mississippian in Vicinity of Tri-State Mining District

System	Series	Formation	Member	Bed*	Thickness (m)	Description
Mississippian	Meramecian	Quapaw			0-9	gray medium-coarse crinoidal limestone
		Warsaw	Moccasin Bend	B	0-38	Gray and brown limestone and dolomite
				C	0-10	Gray and brown limestone and dolomite, blue, brown and white chert
				D	5.5-7	whitish limestone, dolomite and chert. "Cotton rock"
				E	1.5-2.4	coarse, sandy dolomite or chert; importante ore bed in some mines (galena)
				F	3.5-4.6	Limestone and chert
				G	9-12	important ore bed, in the area of the Picher mines, thin bedded chert and dolomite
				H	4.5-6	Thin bedded limestone or cherty beds 5-12.5cm, an ore horizon in some mines
	Osagean	Keokuk	Bartler Springs	J	1.2-2.4	Limestone and chert, mineralized in areas of intense shattering; sometimes occurs as limy stratum
				K	2.4-3.6	Important ore bed (upper 2/3s of bed); limestone w/rounded chert nodules in the upper part, long larger nodules in the lower part
				L	7.8-9	Chert, contains ore in zones of intense shattering; sometimes a 1.5m stratum of oolite is found near base.
			Short Creek Oolite	M	5.8-6.6	"Joplin member". One of the most important ore beds in the Tri State Mining District,
		Elsey	"Grand Falls Chert"	N	6-8	Massive limestone, dolomite or chert, nodules occasionally contain ore; in some places, chert is in beds, known as the "porcelain" stratum (0.3m)
				O	2.5-3	Important ore bed, round flat nodules embedded with bands of chert, 2.5-10 cm thick; in some mines layers of galena and/or sphalerite; mineralization call the "sheet ground", in some places merges with P and Q beds to form ore deposits 9-11.5m thick
				P	0-3	Large chert nodules interbedded with chert beds
				Q	0-9	Limestone and chert
		Reeds Spring		R	15-30	dense limestone, dolomite, or gray or blue chert,
		Pierson			5-20	white granular noncherty crinoidal limestone, St. Joe and Fern Glen are discontinued formations
	Chesterkoklian	Northview			0-19	Gray to greenish gray, calcaeous or dolomitic shale
		Sedalia			0-6.6	Dolomite; buff colored, lower part more cherty

Primary Ore-Bearing Intervals

Primary ore-bearing lithofacies are brecciated chert-rich beds, but includes limestone and dolomite beds such as the Short Creek Oolite.

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