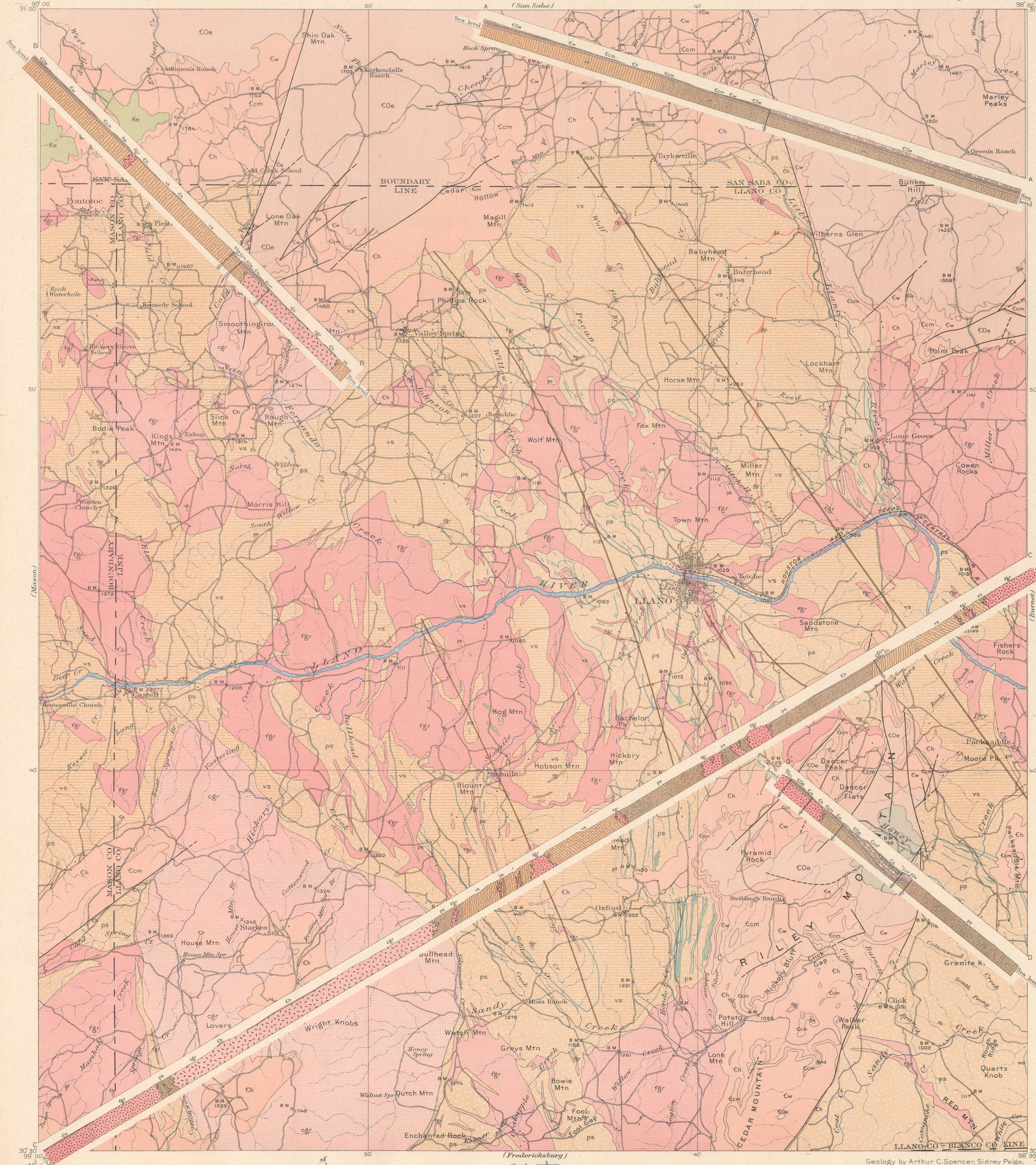
U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

STRUCTURE SECTIONS

TEXAS
LLANO QUADRANGLE



LEGEND

SEDIMENTARY ROCKS

	SHEET SYMBOL	SECTION SYMBOL		
Comanche series	Ke	Ke	Edwards limestone (massive white limestone)	CRETACEOUS
UNCONFORMITY				
Pennsylvanian series	Cs	Cs	Smithwick shale (soft, nearly black carbonaceous shale)	CARBONIFEROUS
	Cmf	Cmf	Marble Falls limestone (dark and light gray, dark-blue, and black limestones, locally carrying abundant dark chert nodules)	
UNCONFORMITY				
	€Oe	€Oe	Ellenburger limestone (light-gray to brown limestone and dolomite, locally carrying much chert)	ORDOVICIAN
Upper Cambrian series	€w	€w	Wilberns formation (thin-bedded flaggy limestone, shale, and shaly limestone, with thin conglomeratic layers)	CAMBRIAN OR ORDOVICIAN
	€cm	€cm	Cap Mountain formation (bluish and grayish limestone, sandy limestone, and glauconitic sandstone)	
	€h	€h	Hickory sandstone (conglomerate and white and red sandstone, in part calcareous)	
UNCONFORMITY				
Llano series (metamorphic)	ps	ps	Packsaddle schist (amphibolite, graphite, and mica schists and limestone; some basic intrusives included in mapping)	ALGONKIAN ?
	vs	vs	Valley Spring gneiss (acidic gneisses, quartzite, light-colored mica schist, wollastonite bands, and limestone)	
			Limestone beds (in Packsaddle schist and Valley Spring gneiss)	

IGNEOUS ROCKS

cgr	cgr	Coarse-grained granite (batholithic masses)	ALGONKIAN ?
fgr	fgr	Fine to medium-grained granite (large masses and dikes)	
gp	gp	Granite-porphyry dikes (containing opaline quartz phenocrysts)	
pt	pt	Serpentinized peridotite or pyroxenite (small masses or dikes)	
md	md	Metadiorite and metagabbro (small masses or dikes)	
fs	fs	Felsite dikes	

Faults

Axes of anticlines

Axes of synclines

E. M. Douglas, Geographer in charge.
Triangulation by E. M. Douglas.
Topography by Arthur Stiles and J. F. McBeth.
Surveyed in 1898-99.
Culture revised in 1909 by D. B. Penick and C. P. Jamerson.

TRUE NORTH
MAGNETIC NORTH
8 Mi.
APPROXIMATE MEAN DECLINATION 1902.

Scale $\frac{1}{125000}$

1 ½ 0 1 2 3 4 5 Miles

1 ½ 0 1 2 3 4 5 Kilometers

The elevations indicated are now, 1911, known to be 8 feet too high.

Edition of Oct. 1911.

Geology by Arthur C. Spencer, Sidney Paige, and Fred H. Kay.
Surveyed in 1908 and 1909.