

The Appleton oil field is located near the northern rim of the Gulf of Mexico basin. Use the data from well 4835-B in this field (Table 2.2) to solve the following problems. Find the subsea depths of the stratigraphic markers. Write a spreadsheet program using Eqs. 2.3 and 2.4 to find the coordinates of a point between two known points. Find the true vertical depths and the total rectangular coordinates of the formation contacts in the well. What is the orientation of the well where it penetrates the Smackover? Write a spreadsheet program to solve this problem based on Eq. 2.4. Find the true vertical depths and the total rectangular coordinates of the oil-water contact (OWC) and the base of the Smackover. Plot the locations of the stratigraphic tops relative to the surface location of the well on the map (Fig. 2.26). Connect the points to show the shape of the well in map view. How far from the well (horizontally and in which direction) would you expect to first find the intersection of the oil-water contact with the top of the Smackover Formation, assuming constant dip for the Smackover?

Table 2.2. Data from well 4835-B, Appleton field, Alabama. Kelly Bushing: 244 ft

Measured depth = log depth (ft)		True vertical depth (ft)	Depth subsea (ft)	Total rectangular coordinates (ft)	
0		0		0.00 N	0.00 E
928		928		1.72 N	1.93 E
2308		2308		4.53 N	9.51 W
3282		3282		6.37 N	6.29 W
4150	Eutaw				
4400	U. Tuscaloosa				
4811		4811		13.38 N	5.99 W
4890	M. Tuscaloosa				
5150	L. Tuscaloosa				
5525	L. Cretaceous				
6198		6198		30.82 N	17.30 W
7696		7695		61.48 N	7.50 W
8328		8327		74.90 N	1.25 E
8482		8480		74.59 N	18.82 E
8661		8655		71.22 N	53.19 E
8935		8922		66.16 N	117.74 E
9186		9161		62.25 N	194.12 E
9556		9512		54.50 N	310.78 E
10006		9940		34.61 N	447.09 E
10266	Cotton Valley				
10431		10346		7.63 N	568.29 E
11103		10982		55.68 S	777.65 E
11621		11470		116.46 S	938.37 E
11960		11791		142.28 S	1045.58 E
12370	Haynesville				
12450		12253		173.48 S	1206.13 E
12641		12432		185.03 S	1271.62 E
13020	Buckner				
13072	Smackover ^a				
13086		12851		210.98 S	1418.79 E
13190	OWC ^b				
13286	Base Smack				

^a Attitude from dipmeter 12,056. ^b Oil-water contact.

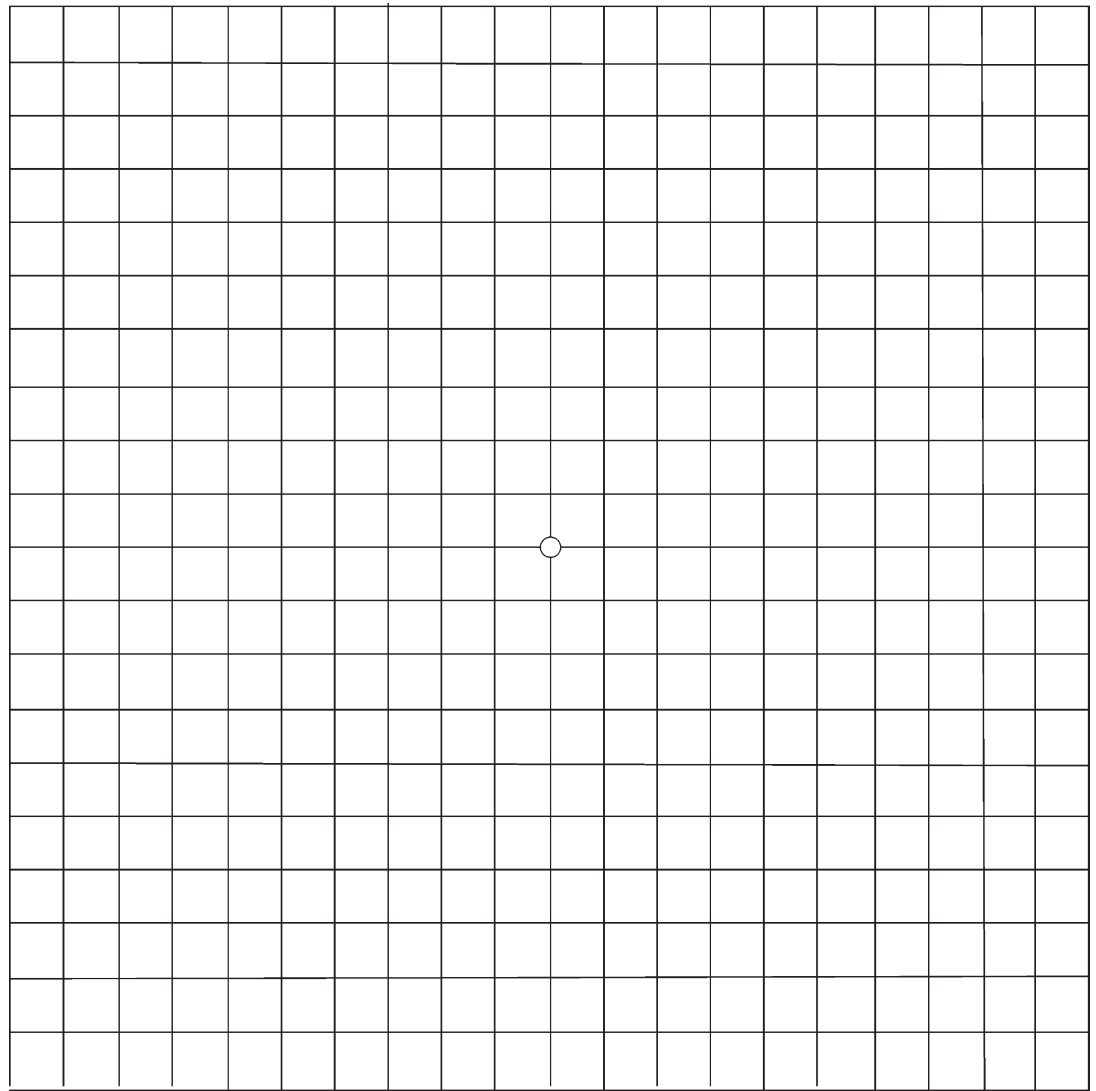


Fig. 2.26. Map grid for plotting points in a deviated well