

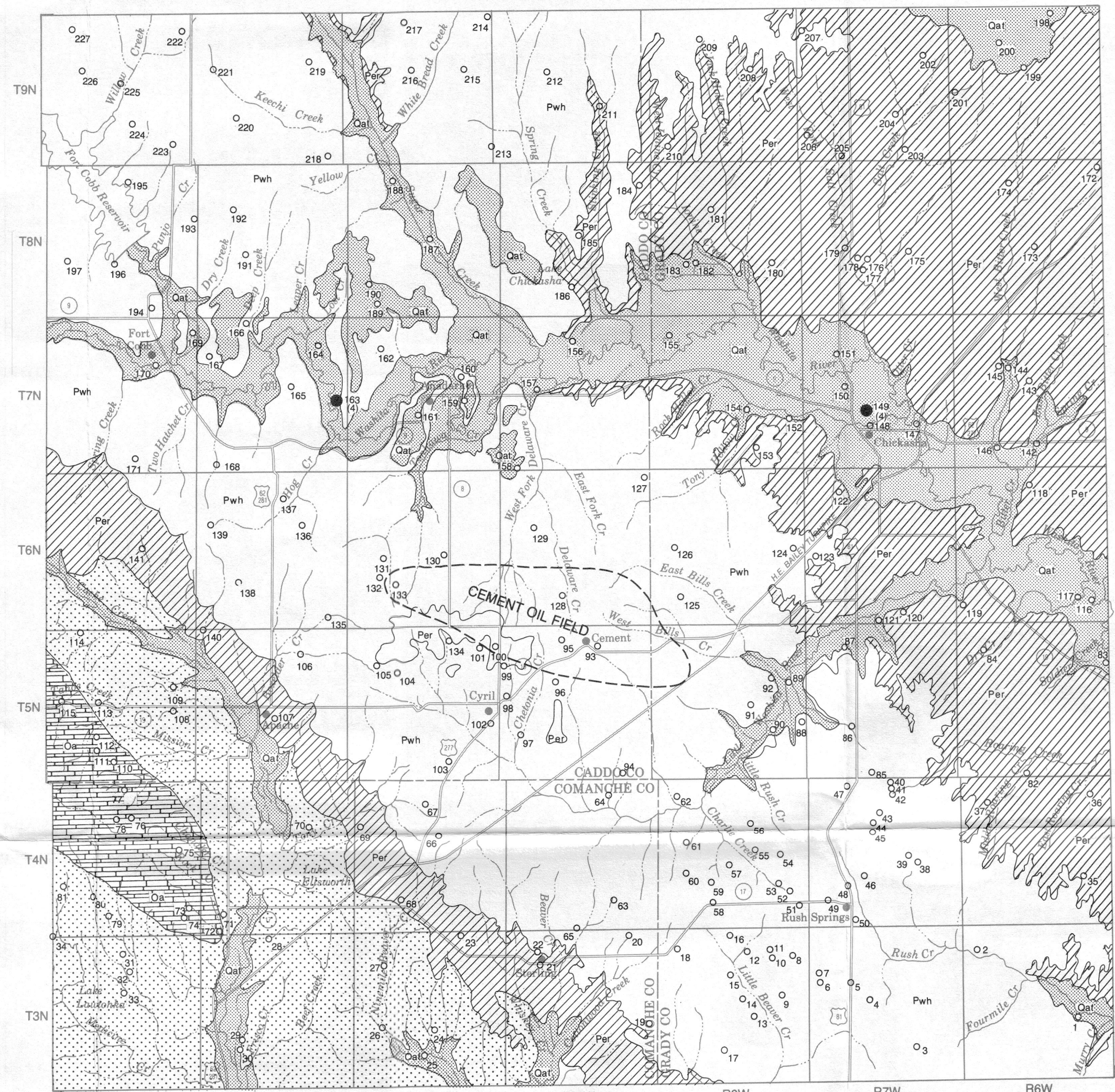


FIGURE A.
MAP SHOWING WATER-WELL LOCATIONS AND PRINCIPAL AQUIFERS IN CEMENT AREA
Compiled by K. V. Lutz, 1980; modified from Hart (1974), Bingham and Moore (1975), Havens (1976), and Carr and Bergman (1976)

EXPLANATION

(Map reference numbers correspond to numbers given in text table 1-2)

Well location; number corresponds to number given in text tables

Well-field location; number in parentheses corresponds to number of wells in field; other number refers to number given in text tables

PRINCIPAL GROUND-WATER AQUIFERS IN CEMENT AREA

Qat
Alluvium and Terrace Deposits

Pwh
Whitehorse Group (Rush Springs Sandstone and Marlow Formation)

Per
El Reno Group (Chickasha Formation and Duncan Sandstone)

Arb
Arbuckle Group

Minor aquifers

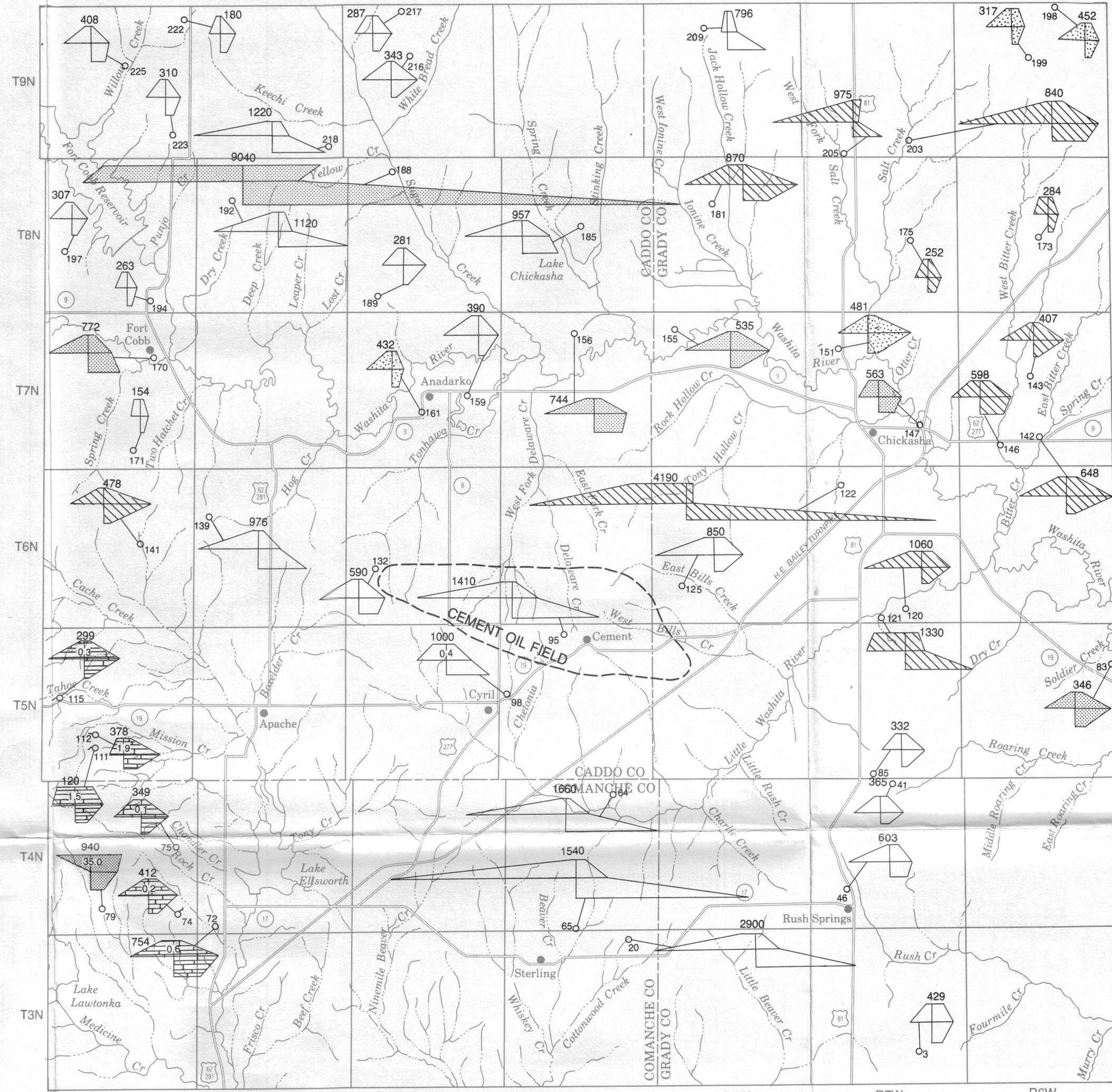


FIGURE B.
MAP SHOWING CHEMICAL QUALITY OF GROUND WATER IN CEMENT AREA
Compiled by K. V. Lutz, 1980

EXPLANATION

(Map reference numbers correspond to numbers in text tables 1-2 and 3-3)

WATER-QUALITY DIAGRAMS

Water-quality diagrams show general character of ground water in Cement area. Size of diagram indicates dissolved solids concentration, the larger the area the more dissolved solids. Shape of diagram is a general indication of chemical content. Constituents are plotted in milligrams per liter. Number above diagram denotes total dissolved solids content expressed in milligrams per liter. Number in center of diagram, where shown, denotes fluoride content, in milligrams per liter. Data modified from Hart (1974), Bingham and Moore (1975), Havens (1976), and Carr and Bergman (1976). In the diagram below, concentrations shown as Na + K represent essentially concentrations of Na; also, concentrations shown as Ca + Mg represent hardness as CaCO₃.

Na + K 407 Cl
Ca + Mg HCO₃
SO₄

0 500 1000 1500 2000
MILLIGRAMS PER LITER

Location of well from which water sample was collected; number corresponds to number given in table 3-3

Spring from which water sample was collected

GEOLOGIC SOURCES OF WATER¹

346
Alluvium

317
Terrace deposits

850
Marlow-Rush Springs

870
El Reno Group

378
Arbuckle-Timbered Hills

940
Minor aquifers

¹Some wells may be completed in more than one geologic source.

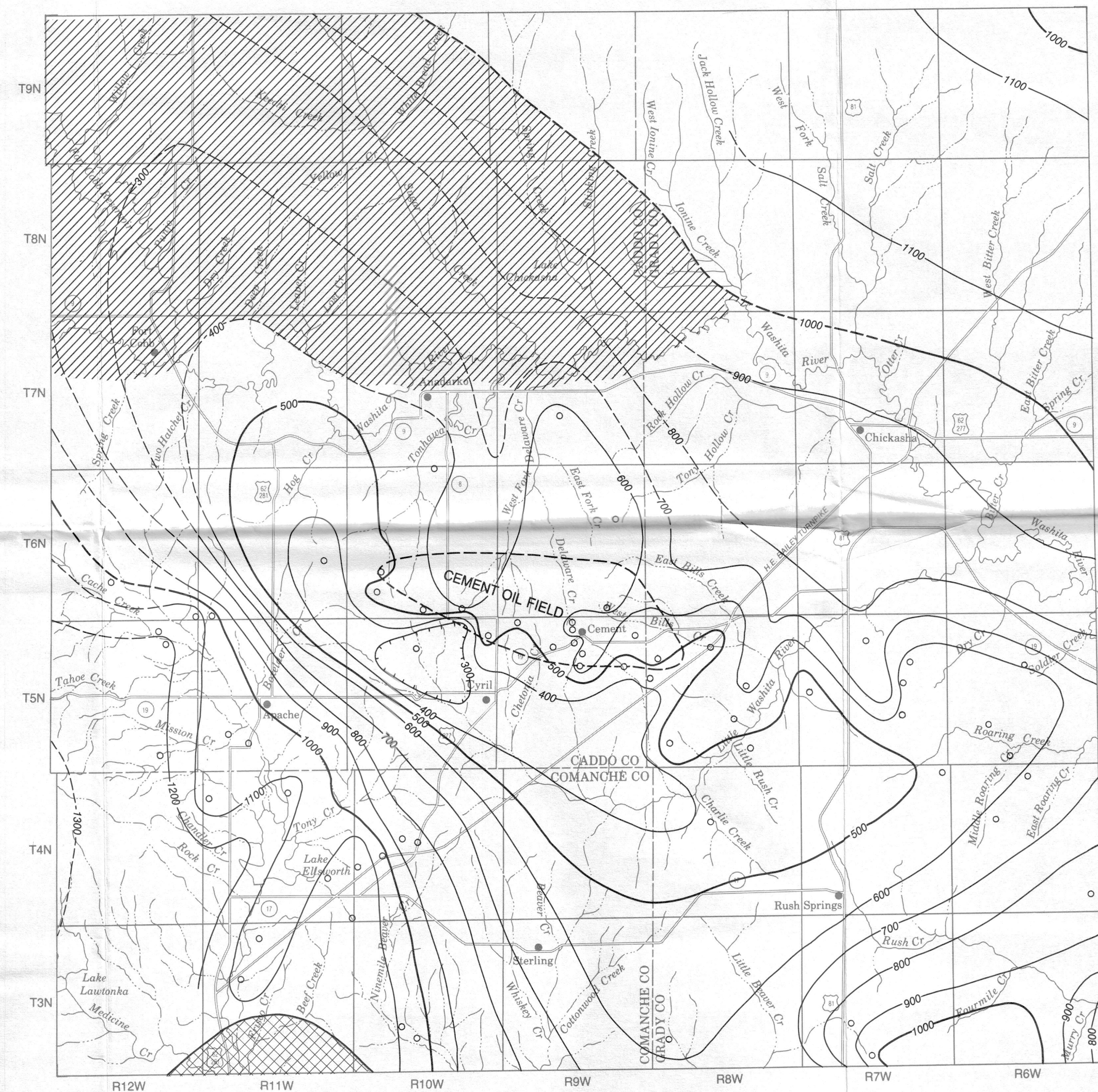


FIGURE C.
MAP SHOWING CONFIGURATION OF BASE OF FRESH GROUND WATER IN CEMENT AREA
Compiled by K. V. Lutz, 1980; modified from Hart (1966)

EXPLANATION

Altitude in feet, on base of fresh water (less than 5,000 milligrams per liter total dissolved solids); dashed where inferred; contour interval 100 feet; datum is mean sea level.

Datum point

Where data are insufficient to contour the base of fresh water, the altitude, in feet, is shown by the following ranges:

(-2,000) to 500

500 to 1,000

(Altitude contours were extended into this region for rock-volume determinations).

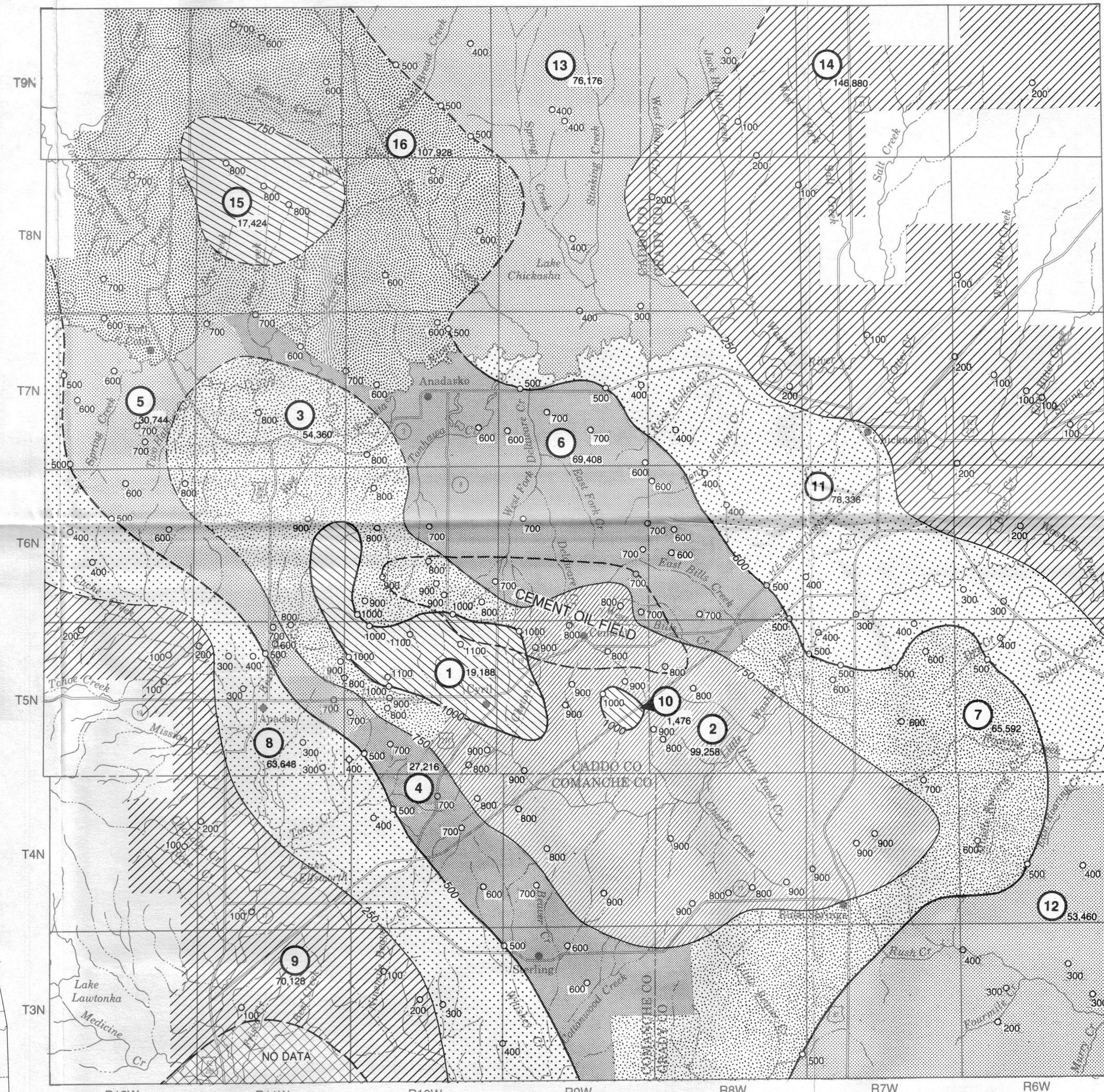
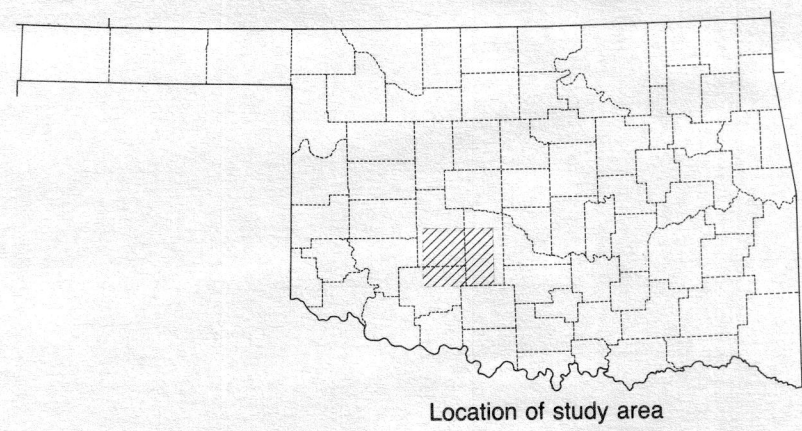


FIGURE D.
ISOPACH MAP OF FRESH GROUND-WATER RESOURCES IN CEMENT AREA
Compiled by M. L. Prater, 1980

EXPLANATION

Isopach, in feet, of fresh ground water (less than 5,000 milligrams per liter total dissolved solids); dashed where inferred; contour interval 250 feet.

Datum point; number indicates thickness of fresh ground water in feet

ROCK-VOLUME DETERMINATION

6 69,408

Bold circled number indicates domain; adjacent number shows area (in acres) for each domain

TABLE 5-1 ROCK-VOLUME DETERMINATION FOR EACH DOMAIN SHOWN ON MAP

Each volume number represents total volume of rock within domain boundary that may possibly contain fresh ground water (less than 5,000 milligrams per liter total dissolved solids).

Domain Number	Area (acres)	Average Thickness (feet)	Volume (acre feet)
1	19,188	1,020	20,147,400
2	99,288	850	84,394,800
3	54,360	850	46,206,000
4	27,216	600	16,329,600
5	30,744	600	18,446,400
6	69,408	650	45,115,200
7	65,592	600	39,355,200
8	63,648	375	23,868,000
9	70,128	125	8,766,000
10	1,476	1,000	1,476,000
11	78,336	375	29,376,000
12	53,460	375	20,047,500
13	78,176	375	29,566,000
14	146,880	125	18,360,000
15	17,624	775	13,553,800
16	107,928	625	67,455,000
Total			481,412,700

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Prepared by Oklahoma Geological Survey

MAPS SHOWING GROUND-WATER CHARACTERISTICS IN CEMENT AREA, CADDO, COMANCHE, AND GRADY COUNTIES, OKLAHOMA

