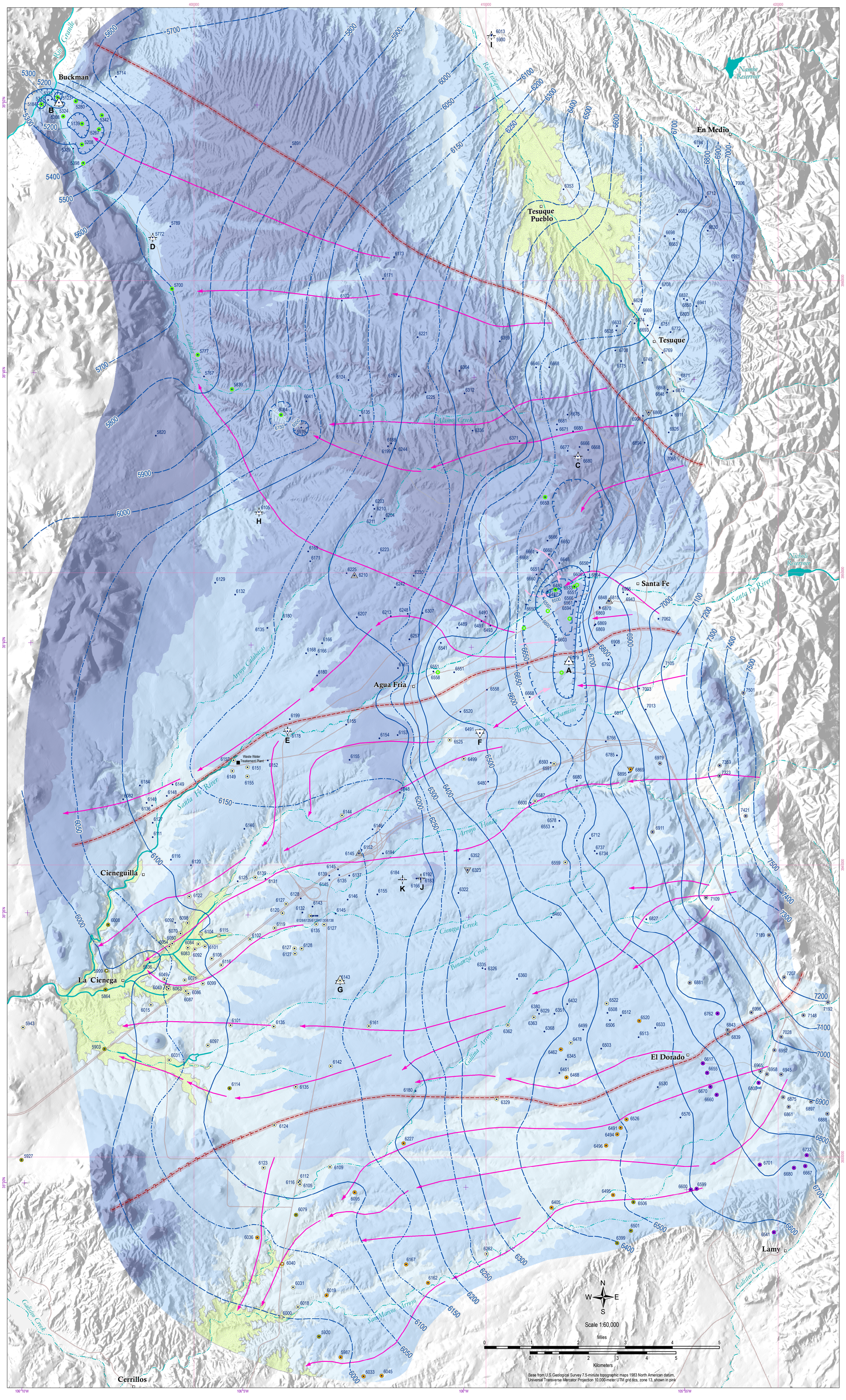
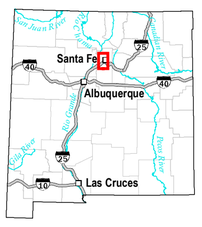


Water-Level Elevation Contours and Ground-Water-Flow Conditions (2000 to 2005) for the Santa Fe Area, Southern Española Basin, New Mexico

Open File Report: 520
October 2009

Peggy S. Johnson



Legend

- 6551 Well in Tesuque Fm (Tt) and water-level elevation
- 6551 Spring with water-level elevation

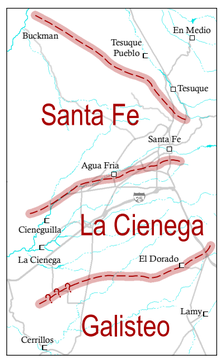
Hydrogeologic unit, of well completion
- Ancha Formation (QTa)
- Espinosa Formation (Te)
- Galisteo Formation (Tg)
- Mesozoic and Paleozoic, undivided
- Embudo Formation (p_e)

Water-level elevation contours

- 100-foot, dashed where approximate, hashed for closed depression
- 50-foot, hashed for closed depression

Ground-Water-Flow Conditions

- Boundary of ground water unit



- Horizontal ground water flow direction
- Reversal of natural ground-water-flow direction

Vertically downward hydraulic gradient in piezometer nest
- -0.016
- -0.02
- -0.04

Vertically upward hydraulic gradient in piezometer nest
- <0.01
- 0.01 - 0.10
- >0.10

- Vertically downward hydraulic gradient in domestic well pair
- Vertically upward hydraulic gradient in domestic well pair

Depth to ground water (feet below land surface)
- <20 feet, delineates discharge zone
- 20 - 100
- 100 - 300
- 300 - 500
- >500

Wells

- Supply well
- Piezometers
  - A St. Michaels, SF-1
  - B Buckman, SF-2
  - C Archery
  - D Buckman, SF-5
  - E Santa Fe River/County
  - F Santa Fe Fairgrounds
  - G Jail
  - H Las Campanas
  - I Cuyamungue
  - J OWA
  - K OWC

- Perennial stream
- Ephemeral stream

COMMENTS TO MAP USERS

The purpose of this map is to illustrate important aspects of regional ground water flow. Ground-water-elevation data depicted herein were calculated primarily from depth-to-water measurements taken between 2003 and 2005 by the New Mexico Bureau of Geology and Mineral Resources (NMBGMR) at New Mexico Tech, the New Mexico Office of the State Engineer (NMOSE), and the U.S. Geological Survey (USGS). Some data contained herein were also compiled from existing sources including the New Mexico Environment Department (NMED), the City and County of Santa Fe, private consultants and drilling companies, and records of the Eldorado Water and Sanitation District (EWSD). While utmost care was taken to ensure data quality, the authors can not verify the accuracy of measurements taken by third parties. Land surface elevations used to calculate ground-water elevation values originated from the 10-m digital elevation model (DEM). Ground water levels in the vicinity of pumping wells are erratic and fluctuate significantly over time and natural variations also occur. The user should be aware that conditions change and information contained on this map may not reflect actual or current conditions. Site- and time-specific conditions should be verified by the user. All additional information contained on this map, other than ground-water-elevation data, are interpretations of the author. The ground-water-elevation contours were interpolated from point data using an inverse distance method (IDW) in ARC INFO 9.3, followed by manual adjustment at study area boundaries and well fields. The ground-water elevation contours were used to further interpret or generate ground-water-flow direction, the boundaries of ground-water flow units, and directions of vertical hydraulic-gradient in multilevel piezometers, piezometer nests, and domestic well pairs. This map is subject to revision and has not been reviewed according to NMBGMR editorial standards.

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