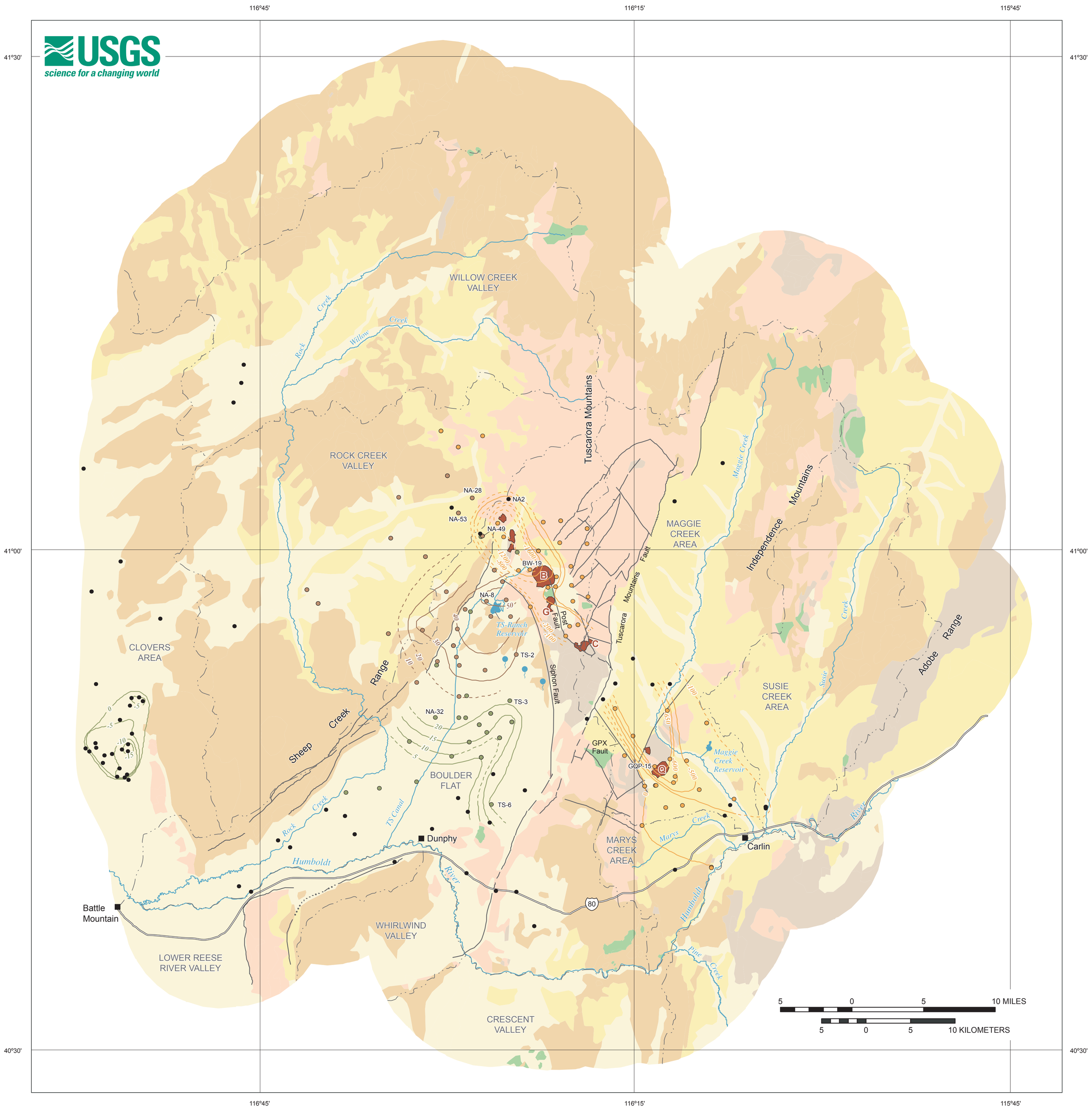
U.S. Department of the Interior
U.S. Geological Survey

Prepared in cooperation with the
NEVADA DEPARTMENT OF CONSERVATION AND
NATURAL RESOURCES, DIVISION OF WATER RESOURCES

SCIENTIFIC INVESTIGATIONS REPORT 2005–5075
Plate 1
Plume, R.W., 2005
Changes in ground-water levels in the
Carlin Trend area, north-central Nevada, 1989–2003



Base from U.S. Geological Survey digital data, 1:100,000, 1979–1988.
Universal Transverse Mercator projection, Zone 11.
North American Datum of 1927

Geology from Stewart and Carlson, 1976
Modified by Plume, 2004

EXPLANATION

Younger basin-fill deposits (Tertiary and Quaternary)—Unconsolidated and poorly to well sorted deposits of clay, silt, sand, gravel, and boulders of alluvial fans, basin lowlands, and stream flood plains. Form shallow basin-fill aquifers

Volcanic rocks (Tertiary and Quaternary)—Basalt and andesite flows, rhyolite flows, flow domes, and shallow intrusives, and silicic tuffs. Interbedded with and underlie older basin-fill deposits

Older basin-fill deposits (Tertiary)—Semi-consolidated, poorly sorted, and tuffaceous deposits of clay, silt, sand, gravel, and boulders. Form shallow basin-fill aquifers

Granitic rocks (Jurassic and Tertiary)—Intrusive bodies of granodiorite and quartz monzonite. Mostly impede movement of ground water

Siltstones (Devonian to Ordovician) —Siltstone, shale, sandstone, quartzite, conglomerate, chert, and marine volcanic rocks. Mostly impede movement of ground water

Carbonate rocks—Limestone, dolomite, and lesser amounts of shale, siltstone, sandstone, and quartzite of Cambrian to Devonian age in the Tuscarora Mountains and Independence Range and Devonian to Permian age in the Adobe Range. Form bedrock aquifers that are being dewatered at Betze and Gold Quarry Mines

Open-pit gold mine—Letters refer to Betze (B), Carlin (C), Genesis (G), and Gold Quarry (Q) Mines

Fault—Dotted where concealed. Name indicates fault discussed in text. May either impede movement of ground water or function as conduit for flow depending on rock types on either side

Hydrographic-area boundary

Lines of equal water-level change—Dashed where inferred; interval variable

Water-level rise in basin-fill deposits of Boulder Flat and water-level decline in basin-fill deposits of Clovers Area, 1993–2003

Water-level rise in volcanic rocks of Boulder Flat, 1993–2003

Water-level decline in carbonate rocks near Betze, 1991–2003, and Gold Quarry Mines,1992–2003

Well—Designation refers to well discussed in text

NA-32 **Measured by mining company**—Completed in basin-fill deposits

NA-8 **Measured by mining company**—Completed in volcanic rocks

BW-19 **Measured by mining company**—Completed in carbonate rocks

Measured by USGS or Nevada Division of Water Resources—Mostly completed in basin-fill deposits

Spring in northern Boulder Flat—Did not exist prior to infiltration at TS Ranch Reservoir

HYDROGEOLOGIC MAP, CARLIN TREND AREA, NORTH-CENTRAL NEVADA

By
Russell W. Plume