

Hydraulic and Mechanical Properties Affecting Ground-Water Flow and Aquifer- System Compaction, San Joaquin Valley, California

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CONVERSION FACTORS, VERTICAL DATUM, ABBREVIATIONS, WELL-NUMBERING SYSTEM, AND SYMBOLS

Conversion Factors

	Multiply	By	To obtain
foot (ft)		0.3048	meter
foot per year (ft/yr)		0.3048	meter per year
gallon per minute (gal/min)		0.06308	liter per second
inch (in.)		25.4	millimeter
mile (mi)		1.609	kilometer
pound per square inch (lb/in ²)		6.895	kilopascal
square foot per year (ft ² /yr)		0.09290	square meter per year
square mile (mi ²)		2.590	square kilometer

Vertical Datum

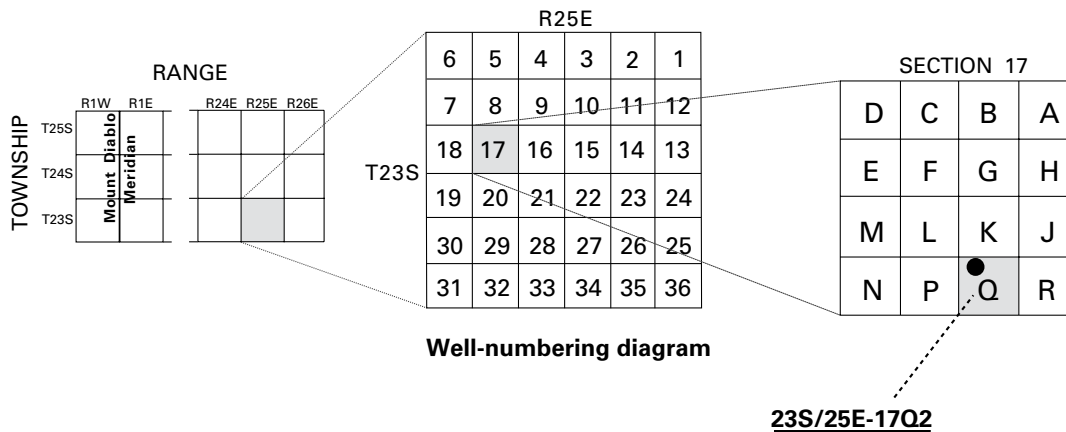
Sea level: In this report, "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

Abbreviations

- USBR U.S. Bureau of Reclamation
- RASA Regional Aquifer-System Analysis

Well-Numbering System

Wells are identified and numbered according to their location in the rectangular system for the subdivision of public lands. Identification consists of the township number, north or south; the range number, east or west; and the section number. Each section is divided into sixteen 40-acre tracts lettered consecutively (except I and O), beginning with "A" in the northeast corner of the section and progressing in a sinusoidal manner to "R" in the southeast corner. Within the 40-acre tract, wells are sequentially numbered in the order they are inventoried. The final letter refers to the base line and meridian. In California, there are three base lines and meridians: Humboldt (H), Mount Diablo (M), and San Bernardino (S). All wells in the study area are referenced to the Mount Diablo base line and meridian (M). Well numbers consist of 15 characters and follow the format 023S025E17Q002M. In this report, well numbers are abbreviated and written 23S/25E-17Q2. Wells in the same township and range are referred to only by their section designation, -17Q2. The following diagram shows how the number for well 23S/25E-17Q2 is derived.



Symbols, in order of appearance

σ_e	effective or intergranular stress
p	pore-fluid pressure
Δ	change (for example, $\Delta\sigma_e$ means change in effective stress)
h	hydraulic head
ρ	fluid density
g	gravitational acceleration
S^*_{sk}	aquifer-system skeletal specific storage
α^*_k	aquifer-system skeletal compressibility
*	aquifer-system property
(k)	skeletal component of specific storage, compressibility, or storage coefficient
S'_{sk}	aquitard skeletal specific storage
S'_{ske}	aquitard elastic skeletal specific storage
α'_{ke}	aquitard elastic skeletal compressibility
<	less than
$\sigma_{e(max)}$	past maximum effective or intergranular stress
S'_{skv}	aquitard inelastic skeletal specific storage
α'_{kv}	aquitard inelastic skeletal compressibility
>	greater than
'	aquitard property
(e)	elastic property
(v)	inelastic property
S_{sk}	aquifer skeletal specific storage
S_{ske}	aquifer elastic skeletal specific storage
α_{ke}	aquifer elastic skeletal compressibility
$\Sigma b'$	aggregate thickness of aquitards
Σb	aggregate thickness of aquifers
S'_k	aquitard skeletal storage coefficient
S_k	aquifer skeletal storage coefficient
S'_{ke}	aquitard elastic skeletal storage coefficient
S'_{kv}	aquitard inelastic skeletal storage coefficient
S_{ke}	aquifer elastic skeletal storage coefficient
β_f	fluid compressibility of water
S_w	aquifer-system storage attributed to the pore water
S'_{sw}	specific storage of water of aquitards
S_{sw}	specific storage of water of aquifers
n'	porosity of the aquitards
n	porosity of the aquifers
S^*	aquifer-system storage coefficient
S^*_v	aquifer-system inelastic storage coefficient

\approx	approximately equal to
S_{ke}^*	aquifer-system elastic skeletal storage coefficient
S_{ske}^*	aquifer-system elastic skeletal specific storage
S_k^*	aquifer-system skeletal storage coefficient
S_{kv}^*	aquifer-system inelastic skeletal storage coefficient
S_{skv}^*	aquifer-system inelastic skeletal specific storage
c_v	coefficient of consolidation
K_v	vertical hydraulic conductivity
T_{50}	time factor at 50-percent consolidation
H_{50}	one-half specimen thickness at 50-percent consolidation
t_{50}	time required to reach 50-percent consolidation
γ_w	specific weight of water
e_o	initial void ratio
e	final void ratio
K'_v	aquitard vertical hydraulic conductivity
\hat{S}_{skv}	sample inelastic skeletal specific storage