U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

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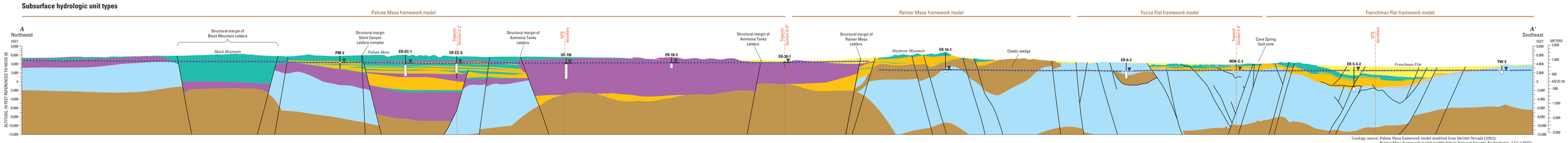
U.S. DEPARTMENT OF ENERGY

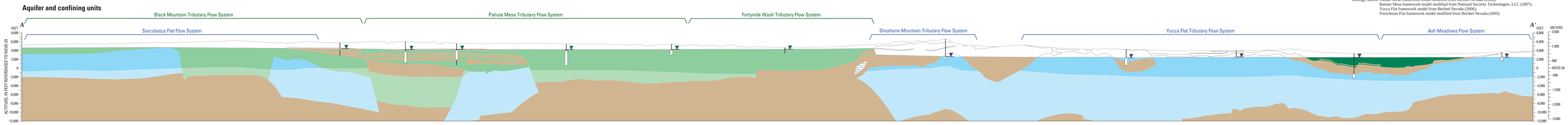
PROFESSIONAL PAPER 1771
Hydrogeologic sections—PLATE 2 of 6, Sheet 1
Fenelon, J.M., Sweetkind, D.S., and Laczniak, R.J., 2010, Groundwater flow systems at the Nevada Test Site, Nevada—A synthesis of potentiometric contours, hydrostratigraphy, and geologic structures

Subsurface hydrologic unit types



Geology source: Pahute Mesa framework model modified from Bechtel Nevada (2002);
Rainier Mesa framework model modified from National Security Technologies, LLC (2007);
Yucca Flat framework model from Bechtel Nevada (2006);
Frenchman Flat framework model modified from Bechtel Nevada (2005)

Aquifer and confining units



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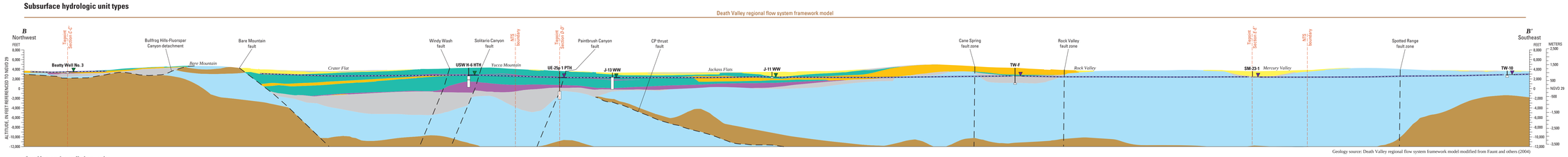
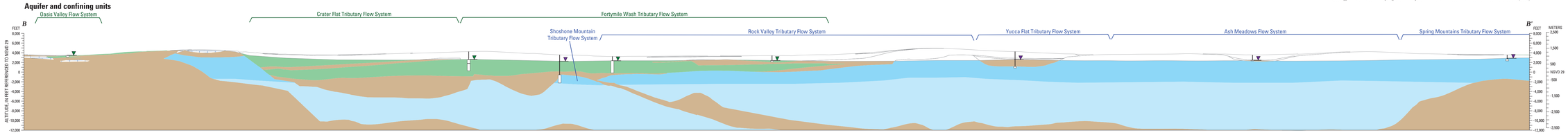
NO VERTICAL EXAGGERATION

Subsurface hydrologic unit types



Geology source: Death Valley regional flow system framework model modified from Faunt and others (2004)

Aquifer and confining units



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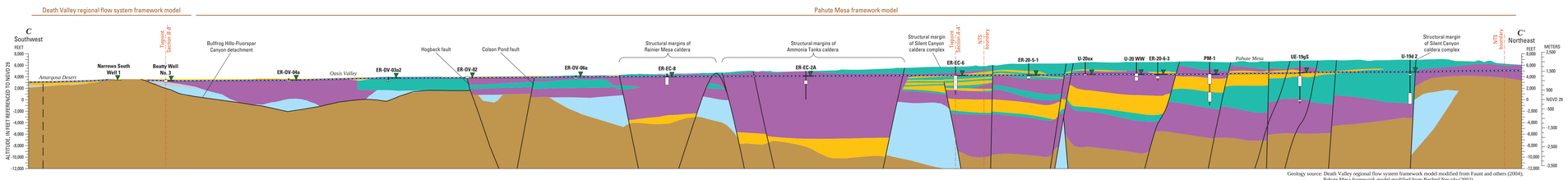

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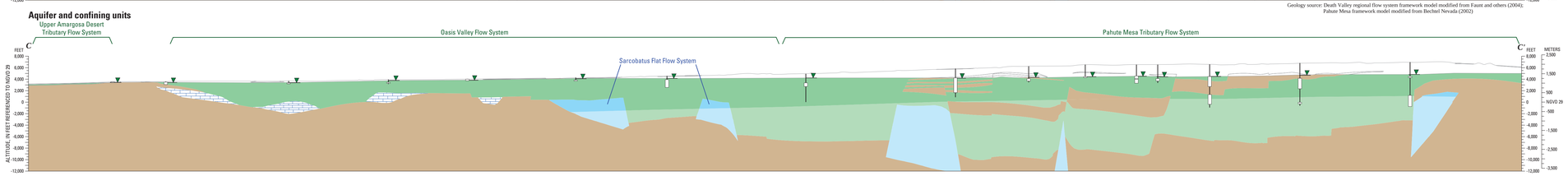
Aquifer and confining units



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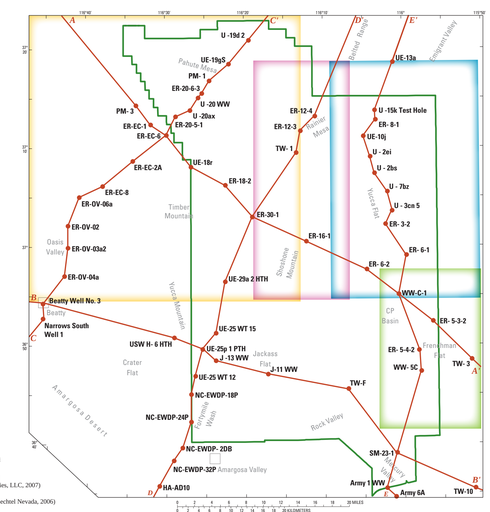

EXPLANATION

Subsurface hydrologic unit type

- Alluvial aquifer
- Alluvial confining unit
- Volcanic aquifer
- Volcanic confining unit
- Volcanic composite unit
- Carbonate aquifer
- Siliceous confining unit

Aquifer and confining units

Unsaturated part of aquifer—Uncolored areas on sections of aquifer and confining units portray areas where units are unsaturated

Local alluvial-volcanic aquifer—Approximate saturated extent of local permeable alluvial and volcanic rocks

Regional alluvial-volcanic aquifer—Approximate saturated extent of regionally continuous permeable alluvial and volcanic rocks

- Shallow part—Area within about 6,000 feet of land surface where flow is assumed to be most active
- Deep part—Area greater than about 6,000 feet below land surface where flow is assumed to be less active

Local carbonate aquifer—Approximate saturated extent of localized blocks of moderately permeable carbonate rock

Regional carbonate aquifer—Approximate saturated extent of regionally continuous permeable carbonate rocks

- Shallow part—Area within about 6,000 feet of land surface where flow is assumed to be most active
- Deep part—Area greater than about 6,000 feet below land surface where flow is assumed to be less active

Confining unit—Includes alluvial, volcanic, and siliceous confining units

Fault from Rainier Mesa, Yucca Flat, Pahute Mesa, or Frenchman Flat framework model—Shown only on sections of subsurface hydrologic unit types. Irregular fault traces are a consequence of the intersection of curved fault planes with the vertical plane of the section

Fault within area of Death Valley regional flow system framework model—Shown only on sections of subsurface hydrologic unit types. Faults were not explicitly part of framework model; generalized trace is shown on sections for reference only

Potentiometric surface—Surface of the shallowest regional flow system

ER-16-1 — **Borehole with discrete open interval**

Hydraulic head in well—Symbols are colored on the basis of the aquifer and confining unit type represented by the head

- Alluvial-volcanic aquifer
- Carbonate aquifer
- Confining unit

Fortymile Wash Tributary Flow System — **Name of groundwater flow system or tributary flow system in alluvial-volcanic aquifer.** See plate 5 for locations of boundaries between systems

Rock Valley Tributary Flow System — **Name of groundwater flow system or tributary flow system in regional carbonate aquifer.** See plate 6 for locations of boundaries between systems

EXPLANATION

Area of hydrostratigraphic framework model

- Rainier Mesa framework model (National Security Technologies, LLC, 2007)
- Yucca Flat framework model (Bechtel Nevada, 2006)
- Pahute Mesa framework model (Bechtel Nevada, 2002)
- Frenchman Flat framework model (Bechtel Nevada, 2005)

The Death Valley regional flow system framework model (Faunt and others, 2004) covers the entire map area; this framework was used outside the area covered by other hydrostratigraphic framework models

B B' **Line of hydrogeologic section**

TW-10 **Borehole and identification label**

Boundary of Nevada Test Site

Hydrogeologic Sections Showing Distribution of Subsurface Hydrologic Unit Types and Designations of Local and Regional Aquifers and Confining Units in the Nevada Test Site Area, Nevada

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2010

For sale by U.S. Geological Survey
P.O. Box 25286, Denver, CO 80225