

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

MISCELLANEOUS FIELD STUDIES MAP MF-2370

SHEET 1 OF 3

Version 1.0

Pamphlet accompanies map

INTERPRETIVE GEOLOGIC CROSS SECTIONS FOR THE DEATH VALLEY
REGIONAL FLOW SYSTEM AND SURROUNDING AREAS, NEVADA AND
CALIFORNIA

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Figure 2. Location of cross-section lines, Death Valley region, Nevada and California.

EXPLANATION

Lines of section featured on sheet 2

Lines of section featured on sheet 3

State boundary

Von Schmidt line (historical line)

County boundary

Nevada Test Site boundary

Interstate highway

State highway

Area depicted on the five index maps (figs. 3-7)

Figure 3. LANDSAT mosaic showing cross-section lines, Death Valley region, Nevada and California.

EXPLANATION

Line of section

State boundary

Von Schmidt line (historical line)

County boundary

Nevada Test Site boundary

Interstate highway

State highway

Combining LANDSAT 6 spectral bands 2, 5, and 7 in RGB space created this false-color composite image. Individual bands were processed to display their full dynamic range. The image was further processed in hue-saturation space to emphasize specific geologic features.

On the image, bedrock exposures of Paleozoic carbonate rocks appear in shades of blue and green; Proterozoic clastic rocks appear in red-brown tones. Bedrock exposures of rhyolitic volcanic rocks in the vicinity of the Nevada Test Site appear in shades of tan and orange. The colors of the basin-filling alluvial fans often reflect the lithology of their source areas. Playa and basin-axis deposits appear in white or light-pink tones; the salt pan in Death Valley appears in bright blue. The area is in general sparsely vegetated. Irrigated domestic and agricultural land appears as bright green, such as the area around Las Vegas and near Pahrump, Nevada.

Figure 4. Index map of place names and cross-section lines, Death Valley region, Nevada and California.

EXPLANATION

Place names in the Nevada Test Site area

Beatty Wash

Crater Flat

Emigrant Valley

Frenchman Flat

Fortymile Wash

Halfpint Range

Jackass Flats

Kawich Valley

Mid Valley

Mercury Valley

Pahute Mesa

Rainier Mesa

Rock Valley

Specter Range

Yucca Flat

Spotted Range
Ranger Mountains
CP Hills
Mine Mountain
Syncline Ridge
Eleana Range
Gold Meadows
Timber Mountain
Yucca Mountain
Shoshone Mountain
Calico Hills
Striped Hills
Bare Mountain
Oasis Valley
Bullfrog Hills

Place names in the Spring Mountains, Pahrump Valley, and Amargosa Desert

Amargosa Desert
Kingston Range
Montgomery Mountains
Nopah Range
Resting Spring Range

Skeleton Hills
Fairbanks Hills
Ash Meadows
Point of Rocks
Eagle Mountain
Stewart Valley

Place names in the Death Valley area

Avawatz Mountains
Black Mountains
Cottonwood Mountains
Furnace Creek Wash
Gold Mountain
Greenwater Range
Greenwater Valley
Grapevine Mountains
Last Chance Range
Panamint Valley
Sarcobatus Flat
Slate Ridge

Brown Peak
Dublin Hills
Gold Valley
Jubilee Pass

Tucki Mountain
Grapevine Springs
Grapevine Canyon
Bonnie Claire Flat

Place names east of the Nevada Test Site area

Desert Range
Desert Valley
Indian Springs Valley
Pahranagat Range
Pintwater Range
Pahranagat Valley
Tikaboo Valley

Papoose Range
Chert Ridge
Buried Hills

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Interstate highway

State highway

Abbreviated place name

Location of numbered place name

Figure 5. Geologic map showing cross-section lines, Death Valley region, Nevada and California.

DESCRIPTION OF MAP UNITS

Playa deposits of Quaternary age—Lake-bed deposits of silt and clay
Valley fill of Quaternary-Tertiary age—Alluvial (stream channel and fan gravels), colluvial, ash-fall, and lake deposits
Volcanic rocks of Quaternary-Tertiary age—Rhyolitic, andesitic, and basaltic lava flow
Volcanic rocks of Tertiary age—Predominantly rhyolitic ash-flow tuffs
Volcanic and volcanoclastic rocks of Tertiary age—Tuffs and tuffaceous clastic rocks

Granitic rocks of Tertiary–Late Jurassic age
Sedimentary and metavolcanic rocks of Mesozoic age—Predominantly sandstones in southeastern part of map area, metavolcanic rocks in southwestern part of map area
Carbonate rocks of Paleozoic age—Limestones, dolomites, and calcareous shales
Clastic rocks of Paleozoic–Late Proterozoic age—Conglomerates, argillites, and quartzite
Igneous and metamorphic rocks of Proterozoic age—Crystalline rocks (gneisses, schists, and migmatites)

EXPLANATION OF SYMBOLS

Contact

Line of section

State boundary

Von Schmidt line (historical line)

County boundary

Nevada Test Site boundary

Interstate highway

State highway

Figure 6. Thickness of Cenozoic basin fill and location of cross-section lines, Death Valley region, Nevada and California.

EXPLANATION

Outcrop of pre-Cenozoic rocks

Modeled thickness of Cenozoic rocks—In meters (from Blakely and others, 1999)

0–250
250–500
500–750
750–1,000
1,000–1,250
1,250–1,500
1,500–1,750
1,750–2,000
2,000–2,250
2,250–2,500
>2,500

Line of section

State boundary

Von Schmidt line (historical line)

County boundary

Nevada Test Site boundary

Interstate highway

State highway

Figure 7. Index map of geologic structures and cross-section lines, Death Valley region, Nevada and California.

EXPLANATION

Caldera boundaries

Black Mountain caldera

Claim Canyon caldera

Silent Canyon caldera complex

Thirsty Canyon lineament

Timber Mountain caldera

Thrust faults

Belted Range thrust

CP thrust

Gass Peak thrust

Grapevine thrust

Keystone thrust

Last Chance thrust

Lemoigne thrust

Montgomery thrust

Pintwater thrust

Resting thrust

Schwaub Peak thrust

Specter Range thrust

Spotted Range thrust

Wheeler Pass thrust

Strike-slip faults

Carrara fault

Cane Spring fault

Death Valley fault zone

Furnace Creek fault zone

Grand View fault

Las Vegas Valley shear zone

Mine Mountain fault
Porter Mine fault
Pahrnagat shear zone
Rock Valley fault
Sheephead fault zone
Stewart Valley–Pahrump fault zone

Normal faults
Bare Mountain fault
Carpetbag fault
Gravity fault
Grapevine fault
Hogback fault
Paintbrush Canyon fault
Windy Wash fault
Yucca fault

Low-angle normal faults and detachments
Boundary Canyon detachment
Bullfrog Hills detachment
Badwater turtleback
Copper Canyon turtleback
Emigrant fault
East Panamint fault system
Fluorspar Canyon detachment
Gold Ace fault
Harrisburg fault
Keane Wonder fault
Mormon Point turtleback
Point of Rocks detachment
Tucki Mountain detachment

Other features
Brown Peak volcanic center
Climax stock
Gold Meadows stock
Little Chief stock
Pintwater anticline
Skidoo pluton

Structural boundary of caldera

Thrust fault—Dashed where concealed or uncertain

Strike-slip fault

Normal fault

Low-angle normal fault or detachment—Detachment faults associated with structural culminations BWT, CCT, and MPT are shown as polygons on map

Line of section

State boundary

Von Schmidt line (historical line)

County boundary

Nevada Test Site boundary

Interstate highway

State highway

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