DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

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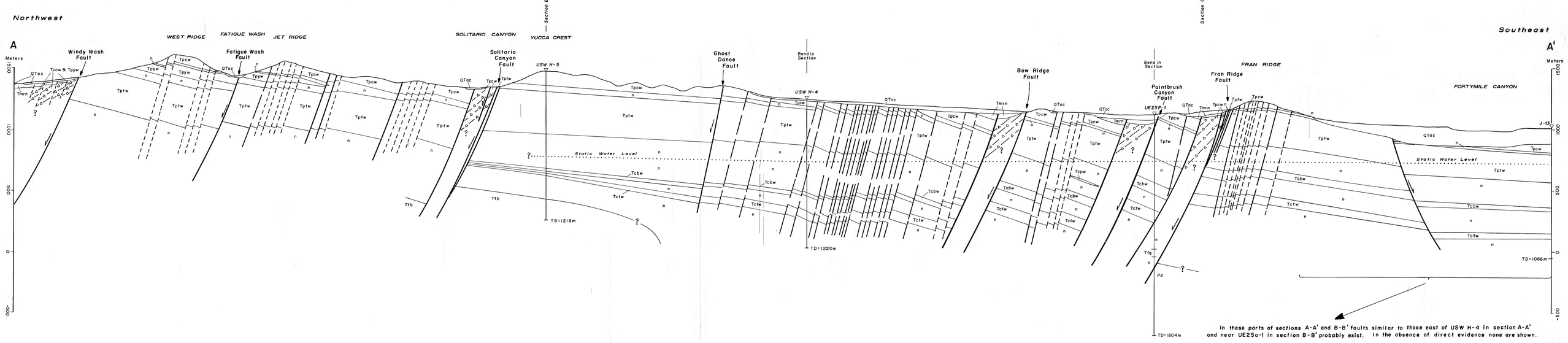
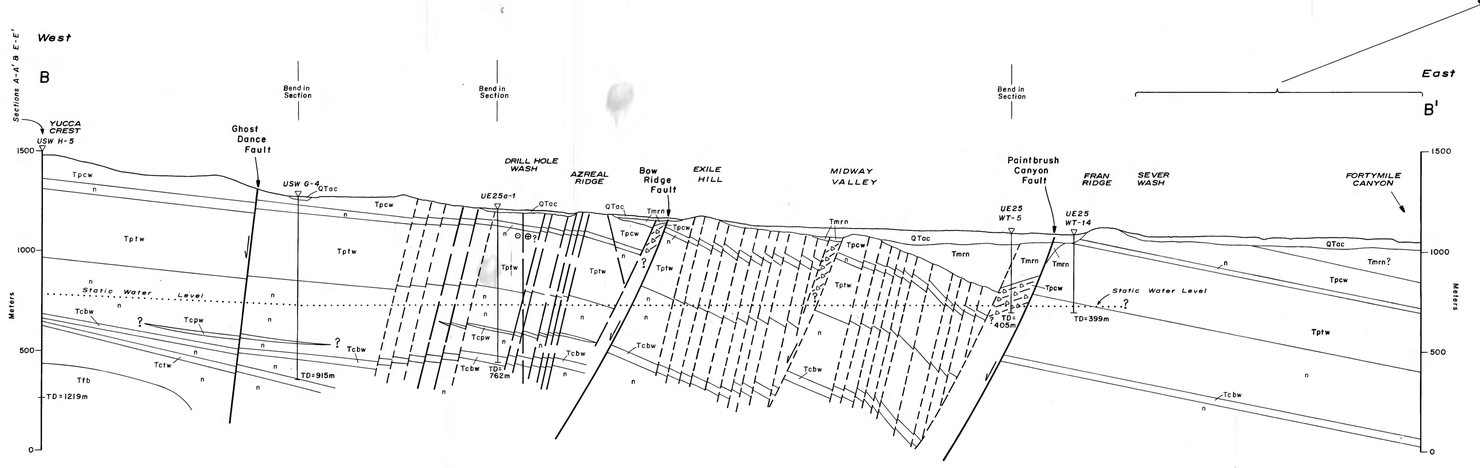
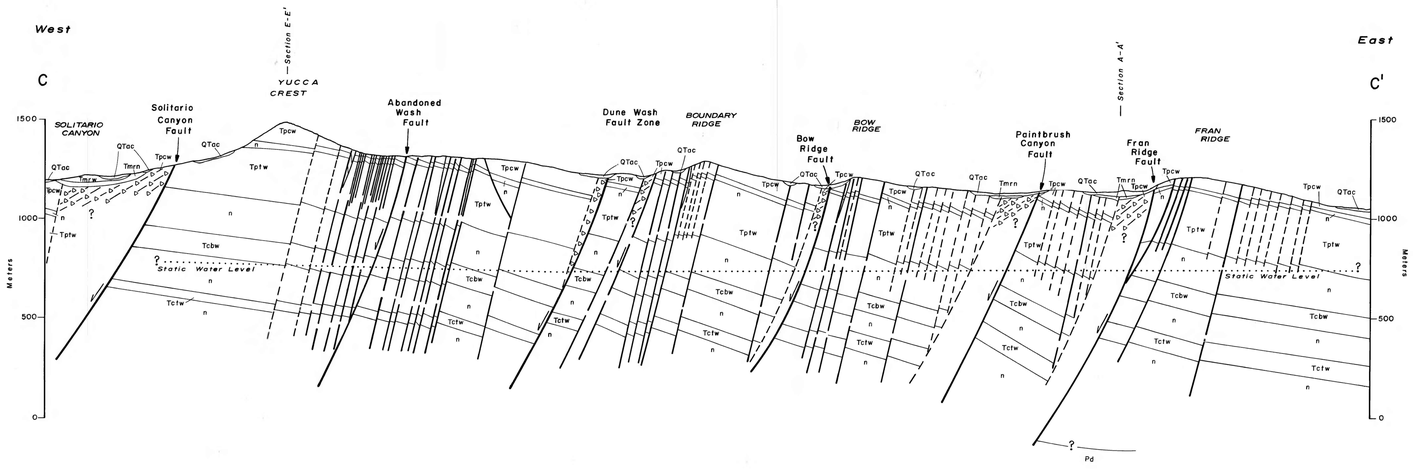
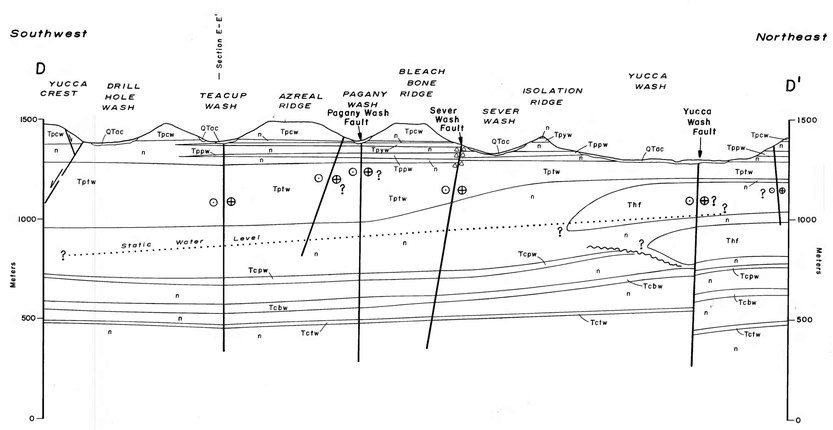
Open-File Report
84-494
Sheet 2

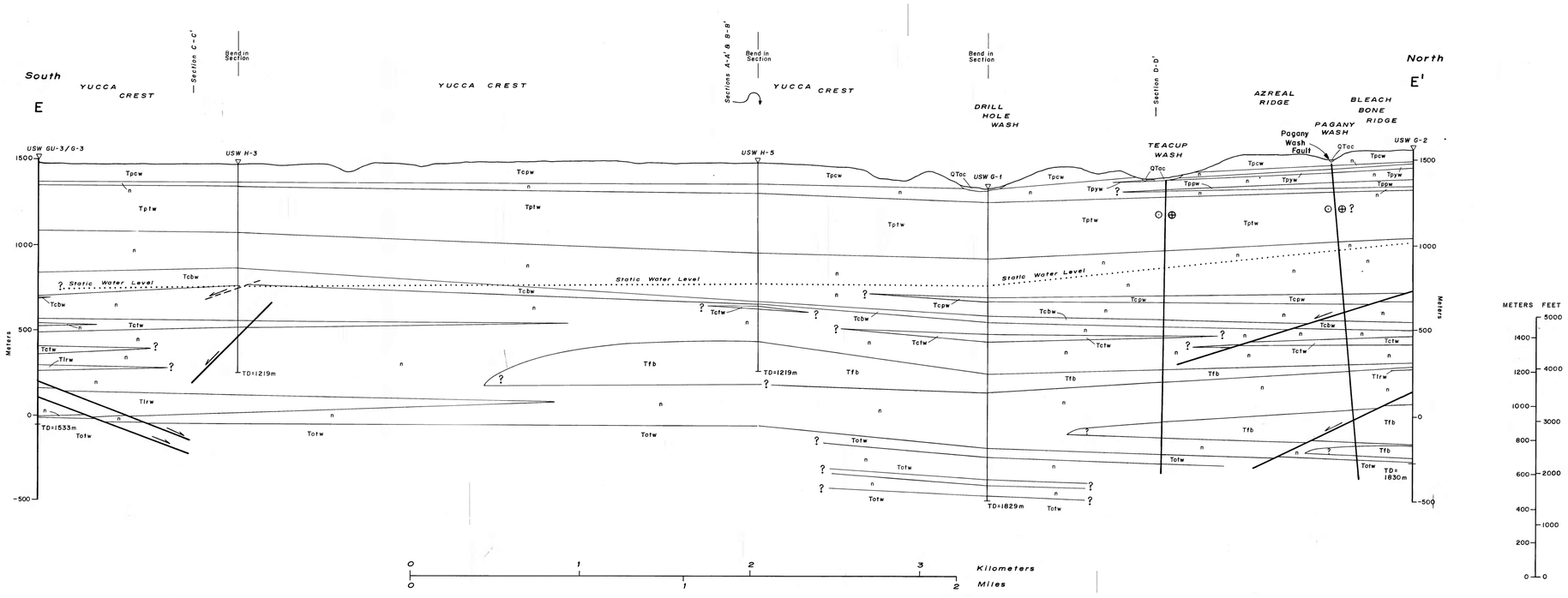


In these parts of sections A-A' and B-B' faults similar to those east of USW H-4 in section A-A' and near UE25a-1 in section B-B' probably exist. In the absence of direct evidence none are shown.









Kilometers
Miles

EXPLANATION

These cross sections emphasize lithologic and stratigraphic features important to hydrology. Because welded tuffs are highly fractured with high hydraulic conductivities and nonwelded tuffs are less fractured with lower hydraulic conductivities, stratigraphic units are chosen to reflect the contrasting properties (Scott and others, 1983). Contacts shown are drawn at major changes in degree of welding rather than at petrographically defined stratigraphic breaks. Moderately and densely welded tuffs are identified by their formal stratigraphic symbol followed by the letter "w". Nonwelded and partially welded tuffs are identified by the letter "n". Commonly several petrographic units are included within the "n" designation: For example, the partially welded and nonwelded base of the Topopah Spring Member, bedded tuffs, nonwelded ashflow tuffs of Calico Hills, nonwelded and partially welded Prow Pass Member , and the nonwelded top of the Bullfrog Member form one unit in some localities. Lava flows and flow breccias have formal stratigraphic symbols with no suffix; these units are commonly highly fractured similar to densely welded tuffs. The static water level is extrapolated between drill holes where its level is known (James H.Robison, U.S.G.S., oral commun., 1984). Stratigraphic data at drill holes are from R.W.Spengler and others, 1981; Maldonado and Koether, 1983, R.B.Scott, U.S.G.S., and Mayra Castellanos, Fenix and Scission, written commun., 1984. Geophysical data used to project structures beneath alluvium include areomagnetic data (G.D.Bath, U.S.G.S., written commun., 1984, Bath and Jahren, 1984); gravity data (D.A.Ponce, U.S.G.S., written commun., 1984); refraction seismology (H.D.Ackermann, U.S.G.S., written commun., 1984); and electromagnetic data (F.C.Frischknecht, U.S.G.S., written commun., 1984).

Physical-Property Stratigraphic Units

Quaternary/Tertiary	QTac	Alluvium and Colluvium
	Tmrw/Tmrn	Rainier Mesa Member of Timber Mountain Tuff, w-welded, n-nonwelded
Tertiary	n	Nonwelded tuff
	Tpcw	Tiva Canyon Member of Paintbrush Tuff, welded
	n	Nonwelded tuff
	Tpyw	Yucca Mountain Member of Paintbrush Tuff, welded
	n	Nonwelded tuff
	Tppw	Pah Canyon Member of Paintbrush Tuff, welded
	n	Nonwelded tuff
	Tptw	Topopah Spring Member of Paintbrush Tuff, welded
	n	Nonwelded tuff
	Thf	Rhyolitic lava flows and flow breccia
	n	Nonwelded tuff
	Thf	Rhyolitic lava flows and flow breccia, continued
	n	Nonwelded tuff

Stratigraphic Units-continued

Tertiary	Tcpw	Prow Pass Member of Crater Flat Tuff,welded
	n	Nonwelded tuff
	Tcbw	Bullfrog Member of Crater Flat Tuff, welded
	n	Nonwelded tuff
	Tcbw	Bullfrog Member, welded, continued
	n	Nonwelded tuff
	Tctw	Tram Member of Crater Flat Tuff, welded
	n	Nonwelded tuff
	Tctw	Tram Member, welded, continued
	n	Nonweled tuff
	Tctw	Tram Member, welded, continued
	n	Nonwelded tuff
	Tfb	Lava flows and flow breccias
	n	Nonwelded tuff
	Tlrw	Lithic Ridge Tuff, welded
	n	Nonwelded tuff

Stratigraphic Units-continued

Tertiary	Tlrw	Lithic Ridge Tuff, welded, continued
	n	Nonwelded tuff
	Tfb	Lava flows and breccias
	n	Nonwelded tuff
	Tfb	Lava flows and breccias
	n	Nonwelded tuff
	Totw	Older tuffs, welded
	n	Nonwelded tuff
	Totw	Older tuffs, welded, continued
	n	Nonwelded tuff
	Totw	Older tuffs, welded, continued
	n	Nonwelded tuff
	Tfg	Fanglomerate
	n	Nonwelded tuff
Devonian	Pd	Paleozoic dolomite

Contact; queried where inferred

Fault with major dip-slip displacement, position known or concealed at surface; arrows show direction of relative displacement. Average dip of fault planes at surface is 70° and subsurface drill hole data suggest a decrease to about 60° below 1 km depth. Some faults cut older QTac but do not cut younger Quaternary deposits shown by partial penetration of fault through QTac to surface

Faults with minor dip-slip displacements, positions known or concealed at surface; No evidence to suggest a decrease in dip with depth; average dip is 76° at surface and in drill holes

Unmapped and inferred faults of small displacement required by geometric constraints in surface exposures and drill holes

Zone of west-dipping strata containing abundant breccia and faults too complex to draw individually; stratigraphic units shown only near surface

Strike-slip faults; ⊕ symbol indicates displacement out of the page; ⊙ indicates displacement into the page; queried where relative motion is doubtful

Static Water Level

Queried where extended beyond drill hole data control, measured prior to December 1983

Unconformity, hypothetical

USW G-2

Drill hole showing total depth

TD=1830m

References cited

Bath, G. D., and Jahren, C. E., in press, Interpretations of magnetic anomalies at a potential repository site located in the Yucca Mountain area, Nevada Test Site: U.S. Geological Survey Open-File Report 84-120, 40 p.

Maldonado, Florian, and Koether, S. L., 1983, Stratigraphy, structure, and some petrographic features of Tertiary volcanic rocks at the USW G-2 drill hole, Yucca Mountain, Nye County, Nevada: U.S. Geological Survey Open-File Report 83-732, 83 p.

Scott, R. B., Spengler, R. W., Diehl, Sharon, Lappin, A. R., and Chornack, M. P., 1983, Geologic character of tuffs in the unsaturated zone at Yucca Mountain, southern Nevada, in Mercer, J. W., Rao, P. S. C., Marine, I. W., editors, Role of the Unsaturated Zone in Radioactive and Hazardous Waste Disposal: Ann Arbor Science, Ann Arbor, Mich., p. 289-335.

Spengler, R. W., Byers, F. M., Jr., and Warner, J. B., 1981, Stratigraphy and structure of volcanic rocks in drill hole USW-G1, Yucca Mountain, Nye County, Nevada: U.S. Geological Survey Open-File Report 81-1349, 50 p.

Geologic sections, Yucca Mountain, Nevada