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LEVELING DATA - EGLINGTON FAULT SCARP

LAS VEGAS VALLEY, NEVADA

by

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Open File Report 79-950

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This report describes leveling conducted by the U.S. Geological Survey on March 25-26, 1979, in Las Vegas Valley, Nevada. Leveling was performed within Township 19S, Range 60E, Section 36, across the Eglington fault scarp (fig. 1). The project included releveing part of a network of closely-spaced bench marks originally set and leveled by the Nevada Highway Department in April 1978. The purpose of the leveling was to determine relative changes of elevation in the vicinity of the fault scarp.

Leveling was conducted with a Zeiss Ni-1 automatic level and Kern 5-mm invar rods. From bench mark 1-18 to 1-29 (fig. 2), leveling procedures adhered to First-order, Class I standards described by the National Geodetic Survey (Federal Geodetic Control Committee, 1974). From bench mark 1-12 to 1-18 (fig. 2), leveling was single run, although balanced foresights and backsights were maintained. The high point on each bench mark tablet was leveled. Elevations relative to bench mark 1-12 are reported in table 1. The elevation assumed for bench mark 1-12 is that reported by the Nevada Highway Department in April 1978. Changes of elevation relative to bench mark 1-12 from April 1978 to March 1979 also are reported in table 1 and are plotted in figure 2.

## References Cited

- Federal Geodetic Control Committee, 1974, Classification, standards of accuracy, and general specifications of geodetic control surveys: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, 12 p.
- Harrill, J. R., 1976, Pumping and ground-water storage depletion in Las Vegas Valley, Nevada, 1955-74: Nevada Water Resources Bulletin 44, 70 p.
- Holzer, T. L., 1978, Documentation of potential for surface faulting related to ground-water withdrawal in Las Vegas Valley, Nevada: U.S. Geological Survey Open-File Report 78-79, Denver, Colorado, 10 p.

Table 1.--Elevations and Changes of Elevations of Bench Marks

Bench Mark	Elevation (m) <sup>1</sup> (March 25-26, 1979)	Change of Elevation (mm) <sup>2</sup> (April 1978 to March 1979)
1-12	693.0084	0
1-13	692.2463	+1.6
1-14	691.4513	+0.5
1-15	690.7120	+0.7
1-16	689.9994	0.0
1-17	689.4946	+0.3
1-18	688.9114	+0.2
1-18A	688.2291	+2.8
1-19	686.4112	+4.0
1-20	683.6386	+14.5
1-21	681.2402	+19.7
1-21A	679.6504	+16.5
1-22	678.1807	+14.2
1-23	676.1524	+ 5.3
1-24	675.0181	-10.7
1-25	674.3590	-28.3
1-26	674.0806	-36.4
1-27	673.4859	-35.4
1-28	673.0295	-36.6
1-29	672.6350	-34.6

<sup>1</sup>Elevation of 1-12 is from April 1978 survey by Nevada Highway Department.

<sup>2</sup>Relative to 1-12. Subsidence is positive.

### Figure Captions

Figure 1. Location of level line in Las Vegas Valley, Nevada, described in this report. Map is from Holzer (1978) which was modified from Harrill (1976). Approximate land subsidence from 1963 to 1972 is shown.

Figure 2. Terrain and changes of elevation (April 1978 to March 1979) profiles across the Eglington fault scarp. Subsidence is positive. Changes of elevation are relative to bench mark 1-12. Fissures mapped on March 25, 1979, also are shown. Southeastern fissure, which lies south of profile and terminates 30 m south of it, is projected into profile.

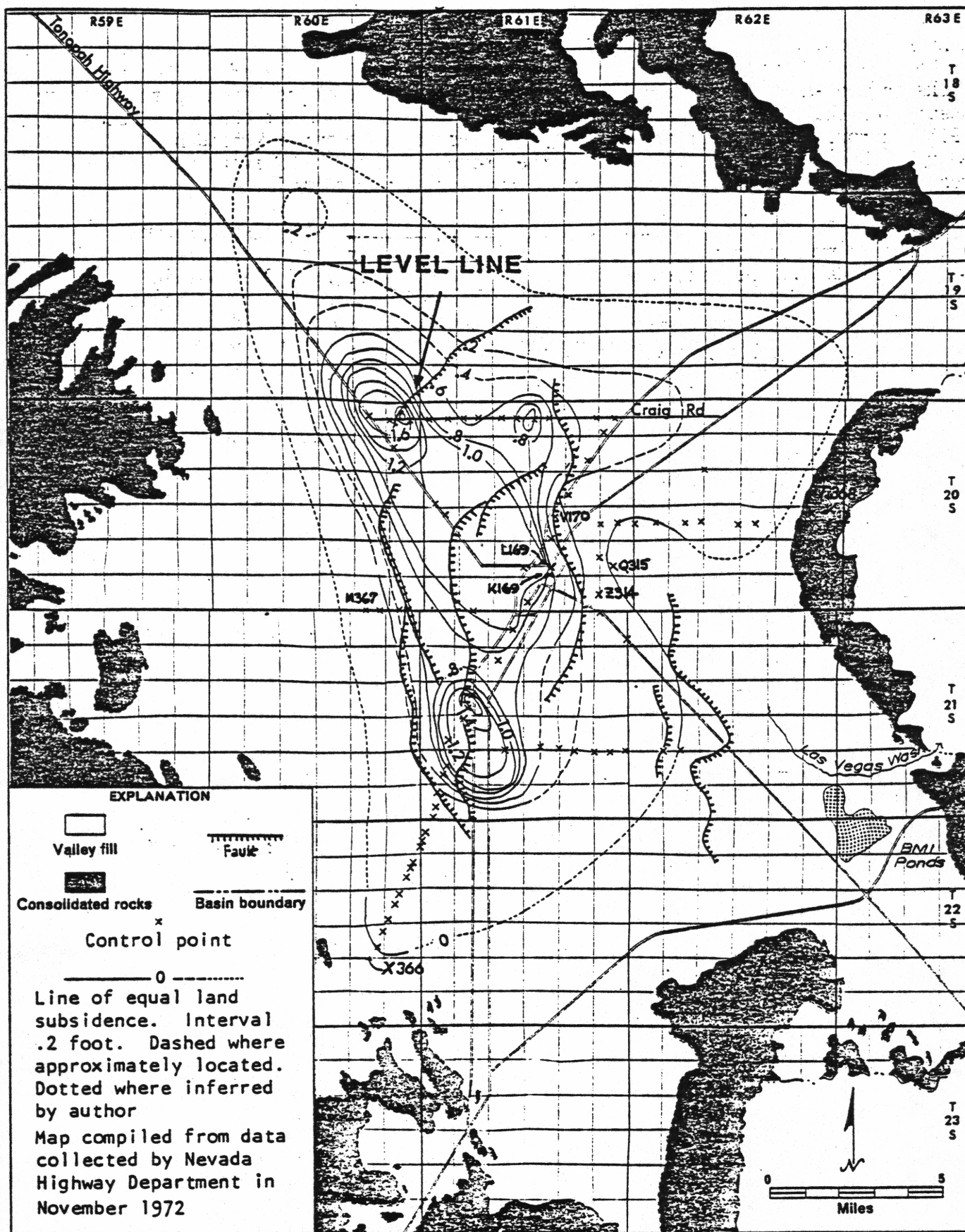


Figure 1

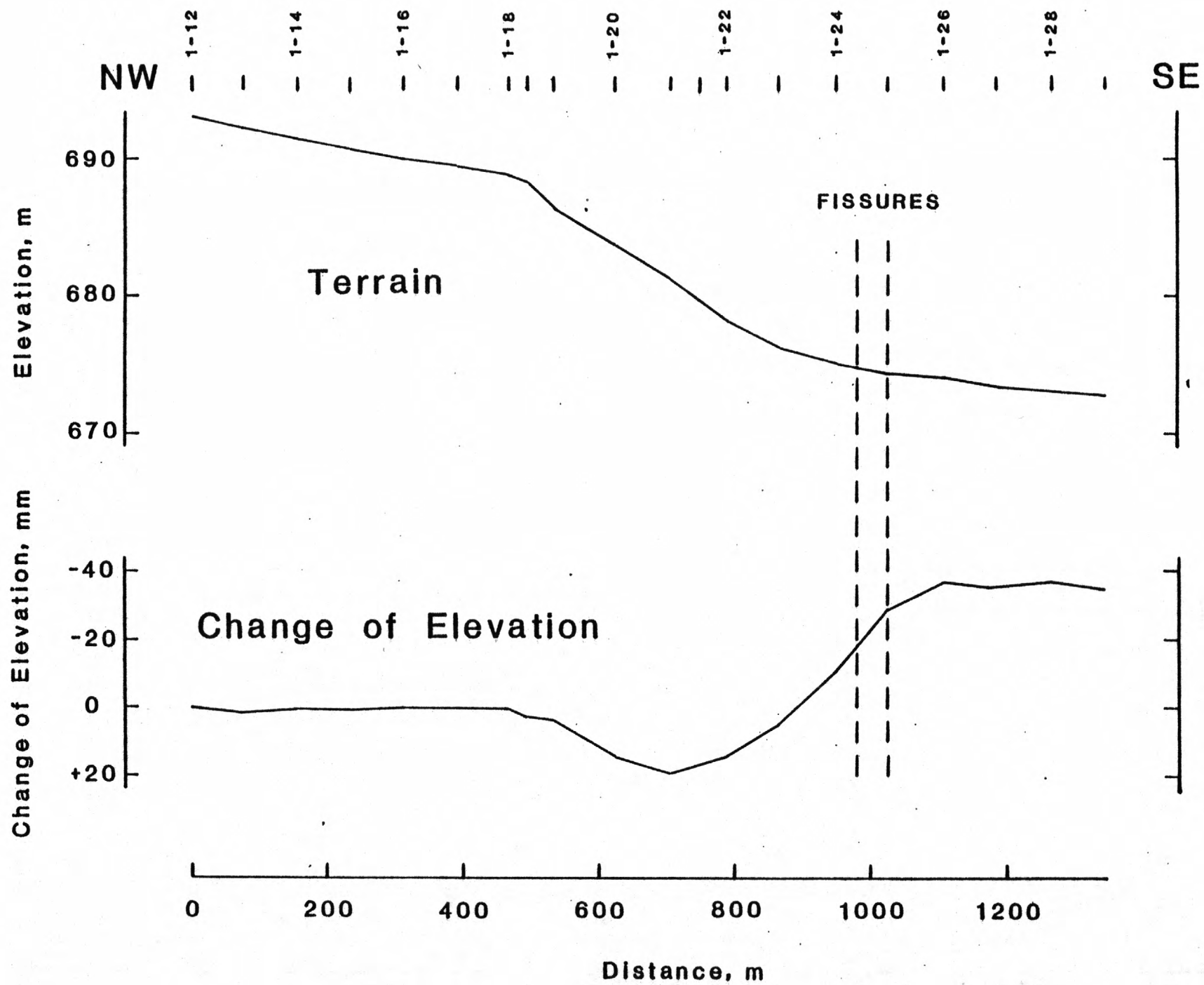


Figure 2