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Solid Waste Management in Seismic Impact Zones

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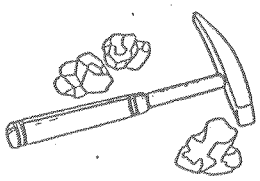
INFORMATION



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NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE 132 - RULES AND REGULATIONS PERTAINING TO SOLID WASTE MANAGEMENT IN SEISMIC IMPACT ZONES

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NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

TITLE 132 - RULES AND REGULATIONS PERTAINING TO SOLID WASTE MANAGEMENT

EFFECTIVE DATE: NOVEMBER 24, 1992

Title 132

Chapter 3

006 Seismic impact zones.

006.01 An owner or operator shall not locate a new solid waste disposal area, which accepts municipal waste or lateral expansion thereof, in a seismic impact zone unless the owner or operator demonstrates in the operating record and notifies the Department of the demonstration in the operating record that:

006.01A All containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

006.02 For purposes of this section:

006.02A "Seismic impact zone" shall mean an area with a ten percent (10%) or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull, will exceed 0.10g in 250 years.

006.02B "Maximum horizontal acceleration in lithified earth material" shall mean the maximum horizontal acceleration depicted on a seismic hazard map, with a ninety percent (90%) or greater probability that the acceleration will not be exceeded in 250 years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment.

006.02C "Lithified earth material" shall mean all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments.

006.02C1 This term does not include human-made materials, such as fill, concrete, and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth surface.

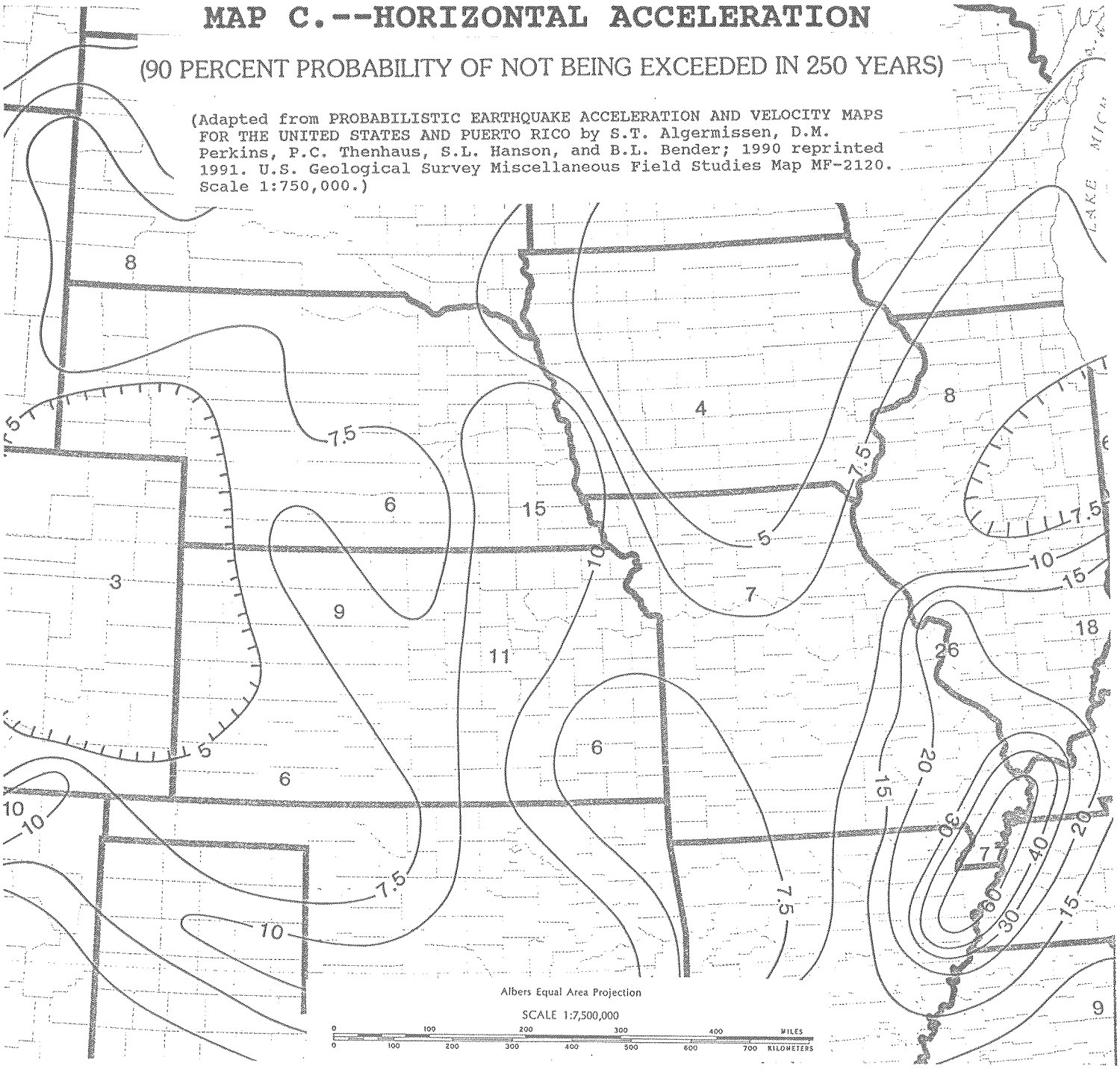
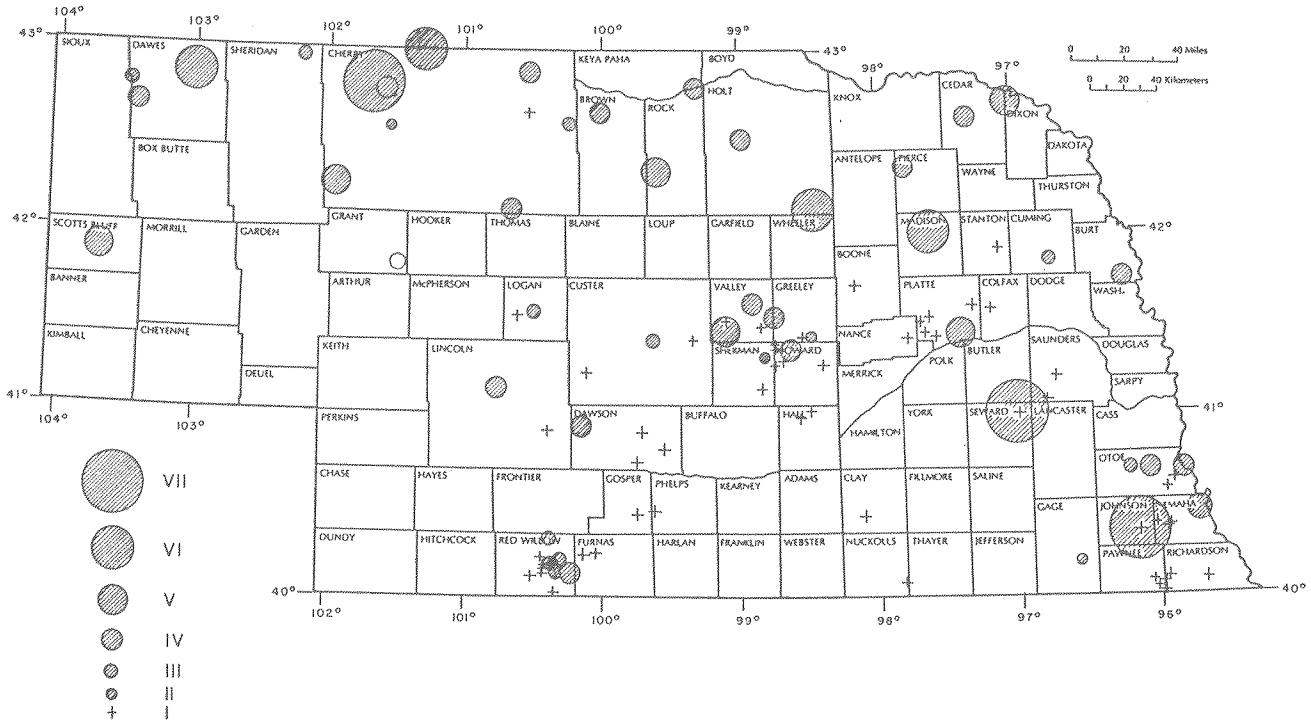


Figure 1. Horizontal, or earthquake, acceleration map of Nebraska and adjacent regions, expressed as percent of the force of gravity (Algermissen and others, 1990). Gravity is the acceleration of a freely falling body of 32 feet per second per second due to the Earth's attraction and to the Earth's rotation about its axis. Ten percent (0.1g) of gravity (Richter, 1958) is generally accepted as sufficient to damage weakly constructed structures. Horizontal acceleration lines are based on 250-year conditional probability, defined as a 90-percent chance of not being exceeded within 250 years. For example, the value of 15 percent of the force of gravity in southeastern Nebraska has a 90-percent chance of not being exceeded (or a 10-percent chance of occurring) during the next 250 years.



EARTHQUAKES IN NEBRASKA

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