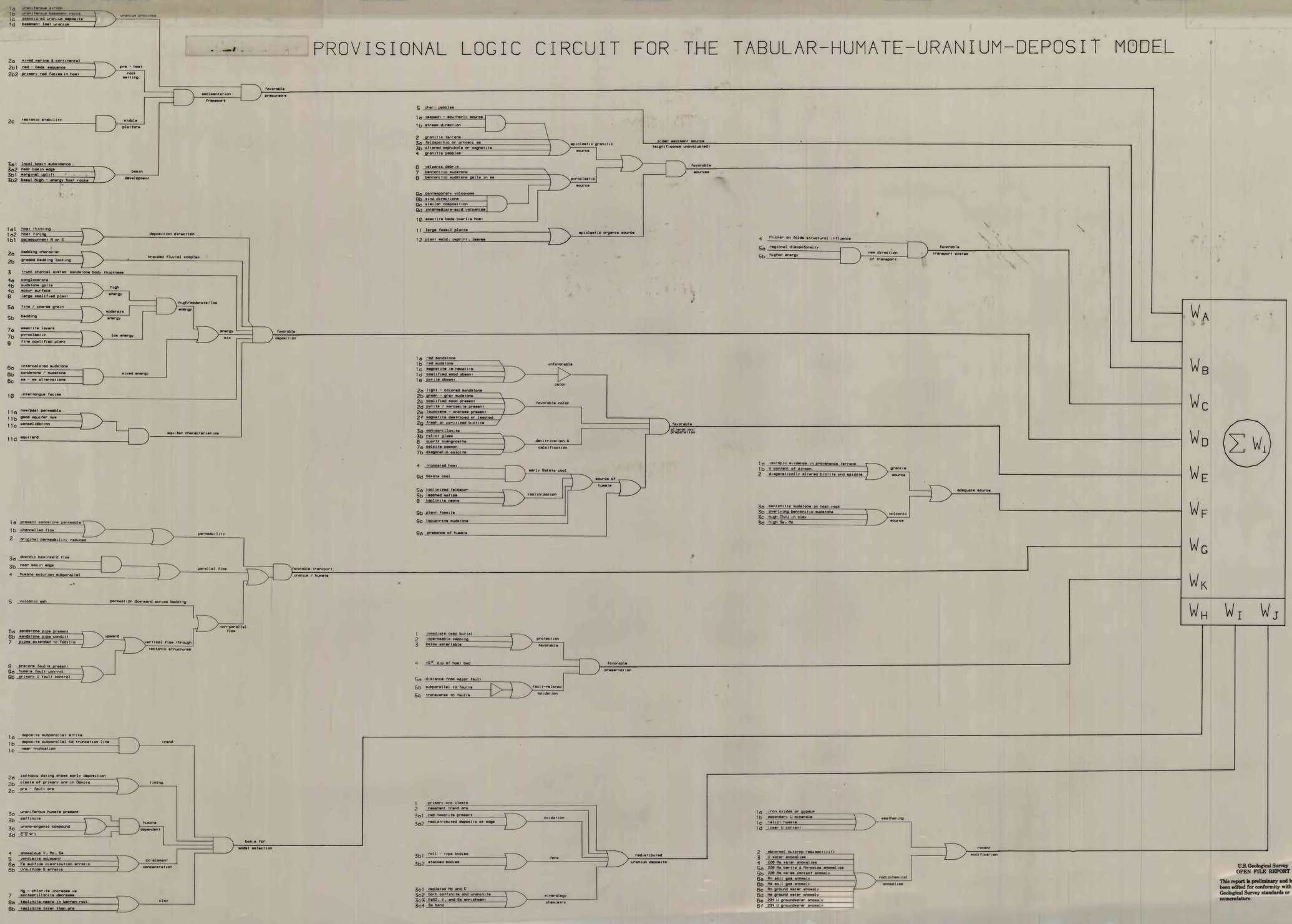
PROVISIONAL LOGIC CIRCUIT FOR THE TABULAR-HUMATE-URANIUM-DEPOSIT MODEL



U.S. Geological Survey
OPEN-FILE REPORT

This report is preliminary and has not been edited for conformity with Geological Survey standards or nomenclature.

EXPLANATION

Logic Symbols

Or — And — Not — W_i Weight

Each entry in the logic circuit can be answered "yes", "no", or "don't know", and given a numerical value of +1, -1, or 0, respectively. The values are processed as follows:

Or

A single "yes" answer is sufficient to pass a +1 value through an "Or" logic symbol (or gate). For example, if either 1a, 1b, 1c, or 1d can be answered "yes", this is sufficient to give a +1 value to the "uranium province" requirement. All "no" answers are necessary to pass a -1 value. In the absence of any "yes" answers, the result is to pass a 0 value.

And

All answers must be "yes" to pass a +1 value through an "And" logic symbol (or gate). For example, 6a, 6b, and 6c must be answered "yes" to pass a +1 value to the "mixed energy" requirement. A single "no" answer is sufficient to pass a -1 value. A 0 value is passed if one or more answers are "don't know" and none are "no".

Not

The "Not" symbol (or gate) is given a +1 value, only if the question is favorable when answered negatively. For example, a +1 value is passed when an "unfavorable color" is answered "no". Conversely, a positive answer passes a -1 value.

Weight

The weights, the W_i's, whose summation determines favorability, are calculated as statistical correlations among a set of geographically defined cells within a selected control area.

William A. Scott
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