

LISTINGS OF MODEL INPUT VALUES FOR THE MODULAR, THREE-DIMENSIONAL,
FINITE-DIFFERENCE, GROUND-WATER FLOW MODEL OF THE TESUQUE AQUIFER
SYSTEM IN NORTHERN NEW MEXICO

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ABSTRACT

This report contains listings of model input values for the simulation of three-dimensional ground-water flow in the Tesuque aquifer system in northern New Mexico using a modular, three-dimensional, finite-difference, ground-water flow model. The original simulations were done in 1980 using a mathematical, three-dimensional, finite-difference, ground-water flow model. Conversion of the mathematical model to the modular model was done in 1988. Values for a historical period, 1947 through 1980, and a future period, 1981 through 2080, are listed.

INTRODUCTION

The mathematical, three-dimensional, finite-difference, ground-water flow model of the Tesuque aquifer system in northern New Mexico (Hearne, 1980), which was based on a model code developed by Posson and others (1980), has been converted to the modular model (McDonald and Harbaugh, 1984) by Umari and Szeliga (in press) to take advantage of the more efficient modular code and to use an updated version of a river-routing procedure. This report describes the listings of input values used in the converted model. The input values are contained on a 360-kilobyte IBM-PC¹ compatible diskette that is included with the report.

¹Use of the trade name in this report is for identification purposes only and does not constitute endorsement by the U.S. Geological Survey.

LISTINGS OF MODEL INPUT VALUES

Each listing contains values for a particular modular-model package as defined by McDonald and Harbaugh (1984). Model input values for simulating historical conditions (1947-80) are contained in listings 1-6 and model input values for simulating future conditions (1981-2080) are contained in listings 7-14:

- Listing 1. Input values for the BASIC package of the MODULAR program for the steady-state simulation.
2. Input values for the BCF package of the MODULAR program for the steady-state simulation.
3. Input values for the WELL package of the MODULAR program for the steady-state simulation.
4. Input values for the RIVER package of the MODULAR program for the steady-state simulation.
5. Input values for the SIP package of the MODULAR program for the steady-state simulation.
6. Input values for the Output Control Option of the BASIC package of the MODULAR program for the steady-state simulation.
7. Input values for the BASIC package of the MODULAR program for the historical-future simulation.
8. Input values for the BASIC package of the MODULAR program for the historical-future simulation without irrigation.
9. Input values for the BCF package of the MODULAR program for the historical-future simulation.
10. Input values for the WELL package of the MODULAR program for the historical-future simulation with irrigation.
11. Input values for the WELL package of the MODULAR program for the historical-future simulation without irrigation.
12. Input values for the RIVER package of the MODULAR program for the historical-future simulation with irrigation.
13. Input values for the RIVER package of the MODULAR program for the historical-future simulation without irrigation.
14. Input values for the Output Control Option of the BASIC package of the MODULAR program for the historical-future simulation.

REFERENCES CITED

- Hearne, G.A., 1980, Mathematical model of the Tesuque aquifer system underlying Pojoaque River basin and vicinity, New Mexico: U.S. Geological Survey Water-Supply Paper 2205, 75 p.
- McDonald, M.G., and Harbaugh, A.W., 1984, A modular three-dimensional finite-difference ground-water flow model: U.S. Geological Survey Open-File Report 83-875, 528 p.
- Posson, D.R., Hearne, G.A., Tracy, J.V., and Frenzel, P.F., 1980, Computer program for simulating geohydrologic systems in three dimensions: U.S. Geological Survey Open-File Report 80-421, 795 p.
- Umari, A.M.J., and Szeliga, T.L., in press, Conversion and comparison of the mathematical, three-dimensional, finite-difference, ground-water flow model to the modular, three-dimensional, finite-difference, ground-water flow model for the Tesuque aquifer system in northern New Mexico: U.S. Geological Survey Open-File Report 89-26.

There are five files on the "TESUGUE MODEL Files" disk. The data files for the model itself reside in a "compressed library." The five files are:

- TESUGUE.ARC -- The compressed library of files.
- README.DOC -- A file describing how to retrieve the data files from the library. Print this file for reference.
- PKXARC.EXE -- The program to remove the compressed files from the library.
- FILE.LST -- A cross reference list identifying Primos files and MS-DOS files.
- PKX35A35.EXE - The full suite of file compression/decompression programs and documentation. The README.DOC file explains how to execute this program.