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September 11, 1989

TO: City Commission
FROM: Assistant City Manager

RE: Summary of Test Hole Drilling Program

During the last three years, the City has drilled eight groups of test holes in the Saline River Valley, Ogallala Formation, Dakota Formation and the Big Creek Aquifer. The initial locations of test holes were identified through data collected and compiled from geologists, drilling logs, existing wells and test holes and information from the Division of Water Resources, Kansas Geological Survey, the Kansas Water Office and Kansas Department of Health and Environment. The following is a brief chronological summary of the City's test hole drilling program.

Saline River Valley

In August, 1986, a total of eight test holes were drilled in three different areas along the Saline River in Northwest Ellis County. These test holes were drilled in the river's alluvial aquifer. The test hole results indicated that there is a marginal long term water supply available, but, because of the State's Minimal Stream Flow requirements it would be more feasible to acquire existing water rights senior to this legislation. In addition, the water is extremely hard with a high manganese content which would require additional treatment. Additional testing would be required.

Ogallala Formation

In August, 1986, a total of three test holes were drilled in the Ogallala formation in Western Ellis County. Test results indicated a very minimal water supply not sufficient for the City's long term needs.

In January, 1987, a total of six holes were drilled in the Ogallala formation in a five square mile area in Eastern Trego County. The test results indicated a water bearing formation's that varied in thickness between 3 feet to 34 feet. Two locations were identified as having the potential for development as part of a long term municipal water supply. This area would need substantial testing performed to verify that it could be part of a long term supply.

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Dakota Formation

In August, 1987, a total of six test holes were drilled in the Dakota Formation in Southwest Ellis County and in an area northwest of Hays. Test results at two locations in Southwest Ellis County indicated an area of fairly good water both in quality and quantity. Hence, further testing in this area was recommended.

In addition, test hole #4 which was drilled northwest of the City, also has good quality and quantity for the Dakota formation and warranted additional testing in the area.

During December, 1987 to January, 1988, four more test holes were drilled in and around Hays as a follow up to test hole #4. Test results showed that hole #9 also had good quality and quantity water from which the driller recommended additional testing in the vicinity.

During the period from August, 1988, to November, 1988, five more test holes were drilled around Northwest Hays in the vicinity of test holes #4 and #9. Test holes in the vicinity of #9 were not consistent with results of #9 and questions were raised and directed to driller. Additional test holes drilled around #4 could not narrow the area of this formation and further testing was discontinued at that time.

Big Creek

In February and March of 1989, twelve test holes were drilled in the Big Creek alluvial aquifer in an effort to identify locations for two new emergency wells. Four locations were identified as having the best quantity of water but two were eliminated because of the high level of nitrates. Additional test holes were required at the site north of Dillons for the relocation of this well at the request of the property owner.

Dakota Formation

In June and July of 1989, three more test holes were drilled in Southwest Ellis County as a follow up to the test holes that were drilled in August of 1987. Evidence to date from test results show excellent potential for development of Dakota Formation in this area.