8.5 Groundwater Quality

A detailed analysis on water quality is discussed in Chapter7. The result of hydrogeological analysis on Total Dissolved Solids (TDS) is explained in this paragraph. The data of TDS were gained during this study from JICA test boreholes and the selected existing boreholes belonging each aquifer. A distribution of TDS concentration of each aquifer is shown in Fig.8.5-1 to Fig.8.5-4.

1) Kalahari Aquifer

It is obvious that the high concentration area is located in the south-eastern part of the study area, especially around J-6. This area mostly coincides with the Pre-Kalahari Valley or "Salt Block". The maximum concentration of TDS 14,874 mg/l was recorded at J-6.

According to WHO's Standards for Drinking Water, TDS should be less than 1,000 mg/l. However, its value in the south-eastern area from Aranos exceeds the standard.

2) Auob Aquifer

A high concentration area of TDS is recognized around J-8. The existence of the Salt Block is not so much conspicuous as vague. The maximum value of it is 6,754 mg/l at J-8. Water quality in the north-eastern half of the study area is better than the standard as well as that of the Kalahari Aquifer.

3) Nossob Aquifer

High concentration area of TDS in the Nossob Aquifer is also distributed around J-8. Although total number of data available is not enough to evaluate the aquifer because of its deep existences, it seems that water quality of Nossob Aquifer is the worst among three aquifers. TDS in the most of distribution area of the Nossob aquifer is not satisfied with the standard.

4) Kalkrand Basalt

Although it has not been established yet how the Kalkrand basalt should be evaluated as an aquifer, its water quality is considerably good[*] as shown in Fig.8.5-4. TDS concentration tends to deteriorate toward the southeast from Hoachanas.

[*] Groundwater Quality Map (1982) shows very high saline area around a line from Imperani to Argentine, but it was not found as far as in the study area.

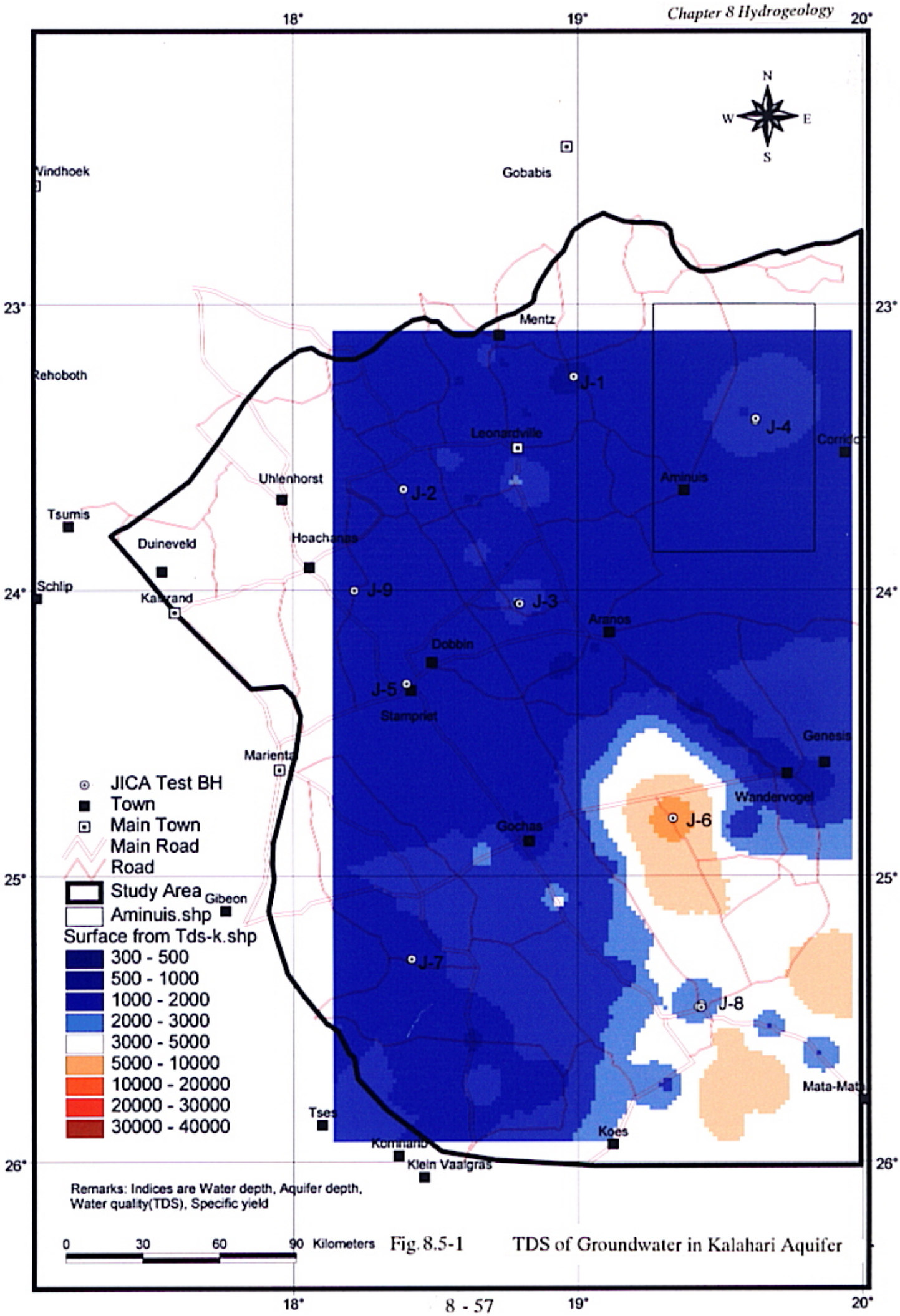

Fig. 8.5-1 TDS of Groundwater in Kalahari Aquifer

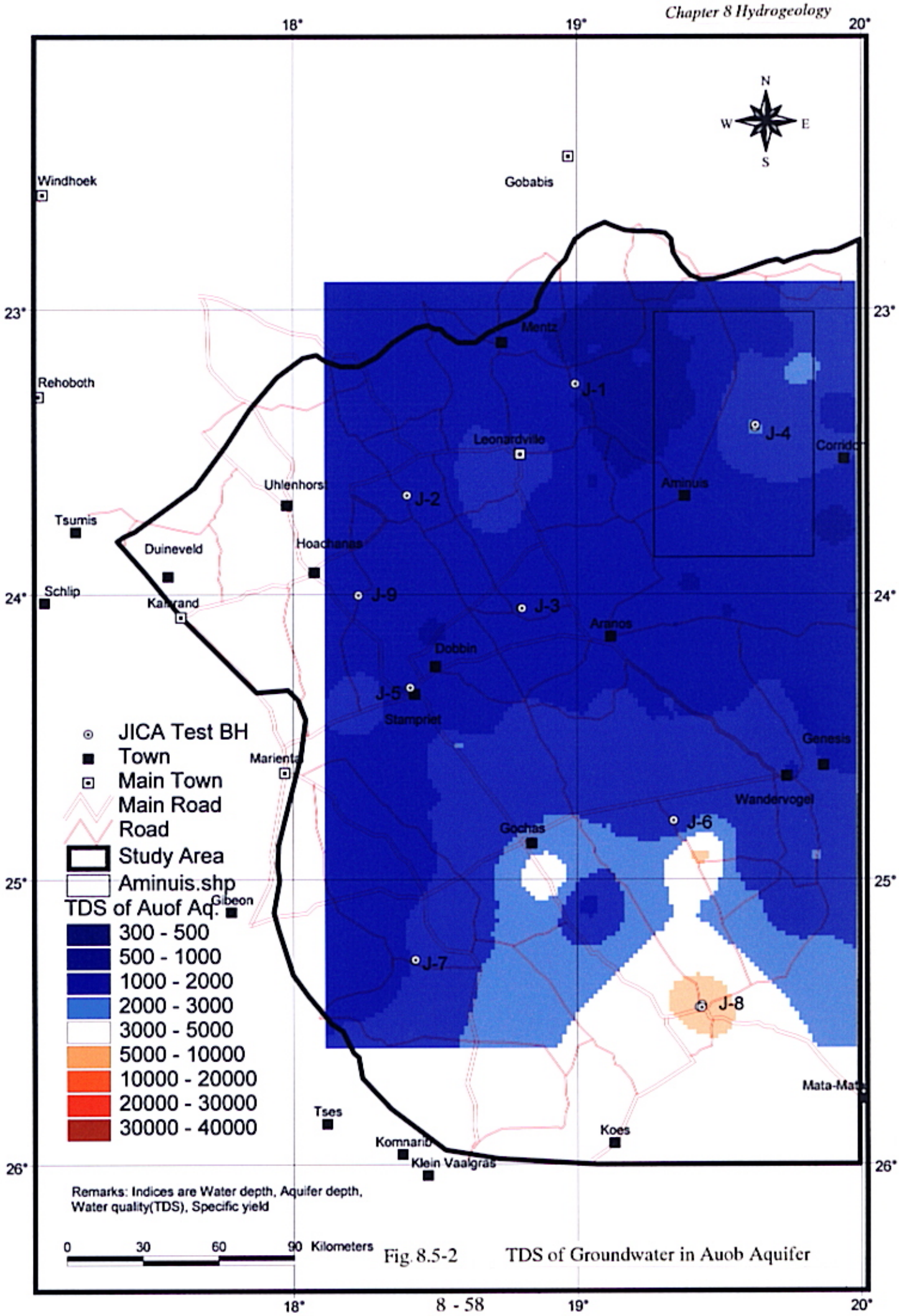

Fig. 8.5-2 TDS of Groundwater in Auob Aquifer