

4.3 CLIMATE AND SOIL MOISTURE

The West Macdonnell Ranges have a semi arid climate with low humidity and low but erratic annual rainfall. The average annual rainfall since 1962 is 285mm with a low of 82mm in 1965, and a high of 783mm in 1974. Most rainfall occurs in the summer months. Evaporation rates far exceed the annual rainfall. Temperatures range from 38° C in January to -2° C in June. There are about 60 days of frost per year. Some permanent water source occurs such as at Glen Helen and Ormiston Gorge.

Prior to fieldwork there had been little rain, hence the moisture levels would likely be low to average.

4.4 SUBSURFACE CONDITIONS

The subsurface conditions are summarized on the sheets in Appendix E. They represent an alluvial veneer of surface soils of mostly sandy gravels overlying residual silty sand and gravelly silts.

There is an observable change in the particle shape from angular to rounded at around chainage 112.0km. This reflects the influence of the reworked conglomerate particles of the Brewer formation on the alignment from 112.0 to 141.0km.

4.5 FLOODWAYS AND CREEK CROSSINGS

As noted in the Terrain Evaluation, there are two main catchments (Davenport River and Rudalls Creek) present along the alignment. These watercourses were both dry at the time of fieldwork but had recently been flowing. Around 70 to 100 floodways and crossings are understood to be proposed for the numerous tributaries of those two catchments. Flood levels were estimated have been up to 1 to 2m above existing pavement level along the Davenport River and 0.75 to 1.5m on the Rudalls Creek catchment. Both watercourses flow to the northeast towards the Finke River system.

There were other low areas where sheet flooding may occur such as at the locations in Land Terrain Unit 1. Flat areas between the higher ridges, described as floodplains, may also be prone to sheet flooding.