

The separators can also function as oil, grease and petrol interceptors and this use should be discussed with the Manufacturer.

4.7. Crossing Culverts

The design of culverts under highways and other crossings, generally in rural areas, shall comply with the following:

- All culverts shall be designed to have sufficient hydraulic capacity to convey the design flood and to allow for greater floods without damage or flooding of adjacent structures or flooding of the highway. Refer to Section 3.2 for design storm return periods and durations for different kinds of culverts. See also Section 4.1 for stormwater system planning.
- Pipe and culvert foundations shall be designed to withstand the scour conditions arising from a 1 in 100 year frequency flood event.

The culverts shall consist of pipes or rectangular reinforced concrete cells with a reinforced concrete or gabion headwall and discharge structure. Energy dissipation measures on the discharge apron may be required. The culvert shall consist of a minimum of two pipes or concrete cells as they carry a high risk of blockage during a storm. Inlet bar screens shall not be provided unless there is a specific site safety or security requirement.

4.8. Tidal Discharge

Where the discharge from the stormwater system could be adversely affected by tide levels, the system design shall be carried out such that no flooding occurs at the return period stipulated in Table 3-2 at the time of Highest Astronomical Tide (HAT), and checked for a return period one category higher than the one used in the design. This will be modelled by setting the tail water at the outfall to the level of the HAT. Refer to Section 4.8.1 for details of tidal range and the HAT value recommended for use in design.

The design of outfalls is shown in Volume 2: Standard Drawings.

4.8.1. Tidal Range

Table 4-5 shows the existing, standard tidal data for Abu Dhabi relative to land datum.

Tide	Level to New Abu Dhabi Datum (m) (NADD)
Highest Astronomical Tide (HAT)	0.8
Mean Spring High Water (MHHW)	0.7
Mean Neap High Water (MLHW)	0.2
Mean Neap Low Water (MHLW)	-0.2
Mean Spring Low Water (MLLW)	-0.7
Lowest Astronomical Tide (LAT)	-1.1

Table 4-5 - Tide Levels

It should be noted that weather conditions and surge impact sea levels and that a maximum storm high tide of +1.3 m level to NADD has occurred. It is therefore recommended that 0.5m be added to the numbers in Table 4-5 to allow for long-term rising sea levels. In other words, the high tide value of +1.3 m level to NADD should be used for design.