

The Launceston Basin is further subdivided by the Hummocky Hills Horst into a western (Cressy) graben and an eastern (Tamar) graben. The Rosevale Coalfield is located on the eastern edge of the Cressy Graben.

Deposition of sediments in the grabens commenced in the Paleocene to Lower Eocene and continued until the Upper Oligocene. The sequence is composed primarily of non-marine clays, silts, sands and gravel, with brown coal and carbonaceous facies, together with minor marine or brackish water sediments. Environments of deposition were in a state of constant flux during the Tertiary, alternating from fluvial to lacustrine to subaerial, and are reflected in the rapid lateral facies changes revealed from exploratory drilling. The primary source of the inorganic sediments which infilled the Tertiary grabens was the sandstone, siltstone and mudstone of the Parmeener Supergroup and the Jurassic dolerite.

Basin-wide correlation of Tertiary strata, and particularly brown coal horizons, has not been established in the Launceston Basin, nor has a formal intrabasinal stratigraphic sequence. Johnson (1888) proposed the term "Launceston Beds" for the Tertiary succession and arbitrarily divided it into three zones. The lower zone contains laminated strata, with brown coal seams and fossilised leaves, resting unconformably upon Parmeener Supergroup strata. It is presumed to have accumulated in a lacustrine flood-plain environment. The middle zone is represented by cross-bedded fluvial sands, as well as clay, silt, oil shale and brown coal. The upper zone comprises gravel and boulder beds on terraces flanking the present course of the Tamar River. The brown coal at Rosevale nominally lies within a dominantly fine clastics facies of Johnson's "middle zone".