

A porosity versus depth decline curve is not generated since this palynologic zone has only been cored once in the Bass basin wells. This core interval indicates excellent reservoir conditions for the basal Upper Cretaceous and upper-most Lower Cretaceous section found in the Durrone #1 well.

Figure 13. is a plot of porosity for the *C. striatus* palynological zone of the Lower Cretaceous section cored in the Durrone #1 well. The porosity range is 8.5 percent and the mean porosity is approximately 14 percent. This palynological zone has only been cored once in the Bass basin wells. This core interval indicates moderate reservoir conditions for this zone of the Lower Cretaceous.

Figure 14. is a plot of porosity for the *L. hughesii* palynological zone of the Lower Cretaceous section cored in the Durrone #1 well. A single figure of 10 porosity percent point is indicated.

Figure 15. is a cross-plot on three cycle log paper of porosity determinations measured in percent point versus permeability measured in millidarcies as generated from all the analysed core intervals of the Paleocene and Cretaceous sections available in the Bass basin.

A wide scatter of points is generated. It should be noted that permeabilities of one or less millidarcies are measured in samples with porosities ranging from 6 to 26 percent points. No clear pattern of decreasing permeability associated with decreasing porosity is recognized.

A series of parallel curves have been generated. These curves indicate that for a specific group of porosity determinations, a trend of permeabilities is indicated. It therefore appears that in specific cases, the permeability does decrease with the porosity. Since all the curves generated are parallel it may be concluded that a single reservoir deterioration mechanism is present.

Two rather well defined parallel trends are recognized. As porosity decreases from 28 percent down to 10 percent, the permeability decreases from 1000 millidarcies down to 320 millidarcies. The second trend indicate that as porosity decreases from 29 percent down to 9 percent, the permeability decreases from 400 millidarcies down to one or less millidarcy.

An effective reservoir area is defined by two lines with porosity in excess or 10 percent point and permeability in excess of 10 millidarcies. Half or more of the points fall within this area.