**Abstract**—

 As it is known, the drilling mud which is the main part of all drilling operations in oil and gas wells should be optimum designed for achieving the target without obstacles. So, the good design of drilling fluid depends on the control of its physical properties such as the density which can be controlled by either adding a desirable solid such as barite or removing undesirable solids such as cuttings. Also, fluid loss can be controlled using lost circulation materials.

In this study, experimental work has been conducted to study the effect of a new material called Olive Peat on the rheological properties of drilling fluid by conducting routine tests.

The laboratory experiment is carried out firstly on row drilling mud without Olive Peat. Then, different percentages of Olive Peat have been added to the row mud and properties of these new mixtures were estimated.

Results presented that the Olive peat has an Inverse relationship with the density of the drilling fluid because of the oil inside the new material which leads to creating an emulsion.

Furthermore, results show that the new studied material can be used in the drilling circulation system as it reduces the volume of fluid loss in mud.

Index Terms— drilling mud, Olive Peat, Density , Rehology, Fluid Loss.