**Reservoir rocks**

The Principal requirement for the occurrence of petroleum is **porous** and **permeable rock.**

Sandstone and carbonate rocks are porous and permeable commonly serve as a rock so serve that accumulation of petroleum is possible and the rock that contain petroleum is called reservoir rock.

The porous and permeable reservoir is deformed or obstructed in a manner that further migration is checked and the petroleum is trapped.

  Fig. 1

In this diagram (Fig.1) it is shown that accumulation of petroleum is coming from same side and hence structural trapping happens duie to faulting and folding of rocks.

**Petroleum reserves consist of three essential elements**

1. The reservoir rocks
2. Pore space or voids
3. Reservoir traps
4. **The Reservoir Rocks:**

Any rock that contain inter pores may be form reservoir rock. Practically all reservoir rocks are unmetamorphosed sedimentary rock eg. Sandstone, dolomite however some rocks like shale and igneous rock found to be occurying as reservoir rock.

**Classification of Reservoir Rock**

1. Clastic or fragmental reservoir
2. Chemical and biochemical (Precipitates )
3. Miscellaneous
4. **Clastic or Fragmental Reservoir :**

These are the rocks derieved from the mechanical disintegration of older rocks. They are also called detrital vrocks and consists of particles varying in size from clay to pebbles and cobalt. Even the particles colloidal size may also present in clastic rocks.

The character of any clastic rock depends upon following factors:-

* Nature of the source Rock
* Distance the grains was transported
* Climate
* The steepness of the gradient
* The transporting agencies
* The biochemical condition of an area of deposition
* Distance from the shore
* The agencies by which the particles are sorted
* The depth of the Water

Cementing material is chiefly a chemical or biochemical deposit or clay that has infiltered around both, the larger particles and the matrix particles.

Matrix of a clastic rock consist of a particles distinctly smaller than the average that partially or entirely filled the interstices between the larger grains.

So, the porosity of clastic rock depend upon the cementing and matrix amount. A good clastic rock become reservoir if they have insufficient amount of cementing and matrix amount is present, i.e in minimum amount. Eg. Sandstone, Conglomerate, Arkose, Graywake and siltstone are by far the most common fragmental reservoir.

1. **Chemical and Biochemical Reservoir :**

 The reservoir rock consist chiefly of chemical and biochemical precipitation. The mineral present in these rocks were precipitated at the place where the rock is present and were not transported.

Eg. Limestone and Dolomite are most common reservoir of chemical and biochemical precipitate.

 Mark and chalk they also serve as good precipitate reservoir.

 They basically consists of Carbonates, Calcite, And sometimes Calcium magnesium Carbonate as well.

 Limestone and dolomite reservoir of biochemical contain significant quantities of biological remain along with normal chemically precipitate material. The main biochemical agents in forming limestones are algae, bacteria, corals, foraminifera, bryozon, brachiopods and molluscas, of these algae are the most important as rock builders and they are considered the chief lying secreting agents. The carbonate secreted by living organism is mostly calcium carbonate in the form of either calcite or aragonite.

1. **Miscellaneous Reservoirs Rocks**

Include the igneous and metamorphic rock and the presence of interconnected voids have often made them good reservoir rock, In such rocks the movement of petroleum may takes place also along the bedding planes or foliation plane or unconformity planes.