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Dept: Industrial Chemistry

Course: CHM 240.

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ASSIGNMENT FOR CHM 240.

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| --- | --- | --- | --- |
| Crude Type | Spec.Gravity | % Sulphur | APIg |
| 1. Bonny Light
 | 0.8398 | 0.14 | 37 ̊ |
| 1. Qua Iboe
 | 0.8398 | 0.14 | 37 ̊ |
| 1. Escravos
 | 0.8448 | 0.14 | 36 ̊ |
| 1. Brass River Olobiri
 | 0.8063 | 0.07 | 44 ̊ |
| 1. Bonny Medium
 | 0.8934 | 0.28 | 26 ̊ |
| 1. Fircados
 | 0.8708 | 0.2 | 31 ̊ |
| 1. Pennington
 | 0.8448 | 0.2 | 36 ̊ |

b.) 1. Planning the effective utilization of a crude oil in the refinery system.

2.Assessing its potential sales value in world markets.

3.Assessing suitability of a crude oil for the manufacture of special production (lubrication, bitumen’s, normal paraffins, chemicals etc.)

4.To provide data for forward planning, studies and future planning, construction.

c.) Physical property measurements: density or specific gravity, viscosity, etc.

 Chemical analysis: Sulphur, nitrogen, trace metals.

 Composition data: individual saturates to C ₃ like methane, ethane…etc. aromatics to C ₁₀ n-paraffins to C ₃₀ or above.

d.) Gravity

Wax and Pour Point

Sulphur content examination.

e.) Under the condition of temperature and pressure occurring underground, reservoir oil contains paraffin wax in suspension or solution in the crude. As the oil flows from the reservoir to the surface there is a reduction of temperature, pressure and the amount of dissolved gases contained in the oil.

2. An oil field is a natural hydrocarbon accumulation in the pores of the underground porous rocks which are called Reservoir Rocks or Reservoirs. ii.) Displacement efficiency is aimed to produce the oil that remains in part of the reservoir already swept by displacing fluid. iii). Sweep Efficiency is aimed at producing the oil that remains in the part of the reservoir not swept by the displacing fluid.

b.) Primary recovery

Hydrocarbons are recovered from the field by means of wells drilled from the surface on the Reservoir. The initial pressure in the fluids occupying the pore space in a reservoir is very often higher than the hydrostatic pressure. By opening a well, therefore the pressure at its bottom is reduced, thus driving Reservoir fluids towards the well. If the natural pressure drops obtained by opening the well is too small, it is possible to operate a pumping system which further decrease which further decrease the pressure.

c.) i.) to maintain the pressure in the reservoir

ii.) to push forward the oil contained in the reservoir towards the producing wells.