**Lab. No. (4)**

**The refraction method**

**Theory:**

Seismic refraction method employs waves that have passed down into the earth. Have been critically refracted at an interface and after travelling through the layer under the interface have been refracted out to the surface again.

The angle of incidence and emergence at a marker bed are critical angles. Refracted waves from successfully deeper and faster marker beds appear as first arrivals with increasing offset. Refracted waves are also called head waves.

-the direct waves travels from shot to detector near the surface of a velocity of (V0) is:

Tdirect= X/V0

The following relations will be presented in the form at time –distance curve.

Sin IC/V0= I/V1

|  |  |
| --- | --- |
| Time (msec) | Distance (m) |
| 0 | 0 |
| 35 | 20 |
| 70 | 40 |
| 100 | 60 |
| 135 | 80 |
| 170 | 100 |

-plot time distance curve and calculate :

- the velocities of the seismic wave in the different media.