**Unit 6 Factors Affecting Static Pressure Head**

**Data Collection**

[**Fluid Pressure in a Reservoir**](https://www.geogebra.org/m/MK7KhgSh)

**https://www.geogebra.org/m/MK7KhgSh**

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| **Part A: Effect of Depth Below Surface on Static Pressure Head** |
| **Table 1 – Effect of Depth Below Surface on Static Pressure Head****Constant *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* = \_\_\_\_\_\_\_\_\_\_;** **Constant \_*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*\_\_ = \_\_\_\_\_\_\_\_\_\_;**

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| --- | --- | --- | --- | --- | --- | --- |
| **Trial** | **Rep.** | **Depth Below Surface** ***m*****(h)** | **Gauge****Pressure*****P*****(Pa)** |  |  |  |
| **1** | **1** |  |  |  |  |  |
| **2** | **1** |  |  |  |  |  |
| **3** | **1** |  |  |  |  |  |
| **4** | **1** |  |  |  |  |  |
| **5** | **1** |  |  |  |  |  |
| **6** | **1** |  |  |  |  |  |
| **7** | **1** |  |  |  |  |  |
| **8** | **1** |  |  |  |  |  |
| **9** | **1** |  |  |  |  |  |
| **10** | **1** |  |  |  |  |  |

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| **Part B: Effect of Density on Static Pressure Head** |
| **Table 2 – Effect of Density on Static Pressure Head****Constant *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* = \_\_\_\_\_\_\_\_\_\_;** **Constant \_*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*\_\_ = \_\_\_\_\_\_\_\_\_\_;**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  **Trial** | **Rep.** | **Density*****ρ*****(kg/m3)** | **Gauge****Pressure*****P*****(Pa)** |  |  |  |
| **1** | **1** |  |  |  |  |  |
| **2** | **1** |  |  |  |  |  |
| **3** | **1** |  |  |  |  |  |
| **4** | **1** |  |  |  |  |  |
| **5** | **1** |  |  |  |  |  |
| **6** | **1** |  |  |  |  |  |
| **7** | **1** |  |  |  |  |  |
| **8** | **1** |  |  |  |  |  |
| **9** | **1** |  |  |  |  |  |
| **10** | **1** |  |  |  |  |  |

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[**Flow Rate from Beverage Dispenser Lab**](https://www.thephysicsaviary.com/Physics/Programs/Labs/FlowRateFromBeverageDispenserLab/index.html)

[**https://www.thephysicsaviary.com/Physics/Programs/Labs/FlowRateFromBeverageDispenserLab/index.html**](https://www.thephysicsaviary.com/Physics/Programs/Labs/FlowRateFromBeverageDispenserLab/index.html)

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| **Part C: Effect of Acceleration Due to Gravity on Static Pressure Head** |
| **Table 3 – Effect of Acceleration Due to Gravity on Static Pressure Head****Constant *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* = \_\_\_\_\_\_\_\_\_\_;** **Constant \_*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*\_\_ = \_\_\_\_\_\_\_\_\_\_;** **Constant *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* = \_\_\_\_\_\_\_\_\_\_;** **Constant \_*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*\_\_ = \_\_\_\_\_\_\_\_\_\_;** **Constant *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* = \_\_\_\_\_\_\_\_\_\_;** **Constant \_*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*\_\_ = \_\_\_\_\_\_\_\_\_\_;** **Constant *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* = \_\_\_\_\_\_\_\_\_\_;**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Trial** | **Rep.** | **Acceleration** **Due to Gravity****g****(m/s2)** | **Time****Interval*****Δt*****(s)** | **Flow Rate*****Q*****(m3/s)** | **Gauge****Pressure*****P*****(Pa)** |  |
| **1** | **1** |  |  |  |  |  |
| **2** | **1** |  |  |  |  |  |
| **3** | **1** |  |  |  |  |  |
| **4** | **1** |  |  |  |  |  |
| **5** | **1** |  |  |  |  |  |
| **6** | **1** |  |  |  |  |  |
| **7** | **1** |  |  |  |  |  |
| **8** | **1** |  |  |  |  |  |
| **9** | **1** |  |  |  |  |  |
| **10** | **1** |  |  |  |  |  |

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**Sample Calculation for Table 3 Flow Rate from Trial 1 Repetition 1**

$Q=\frac{V}{∆t}=$

**Sample Calculation for Table 3 Pressure from Trial 1 Repetition 1**

$$P=\frac{ρ}{2A^{2}}Q^{2}$$