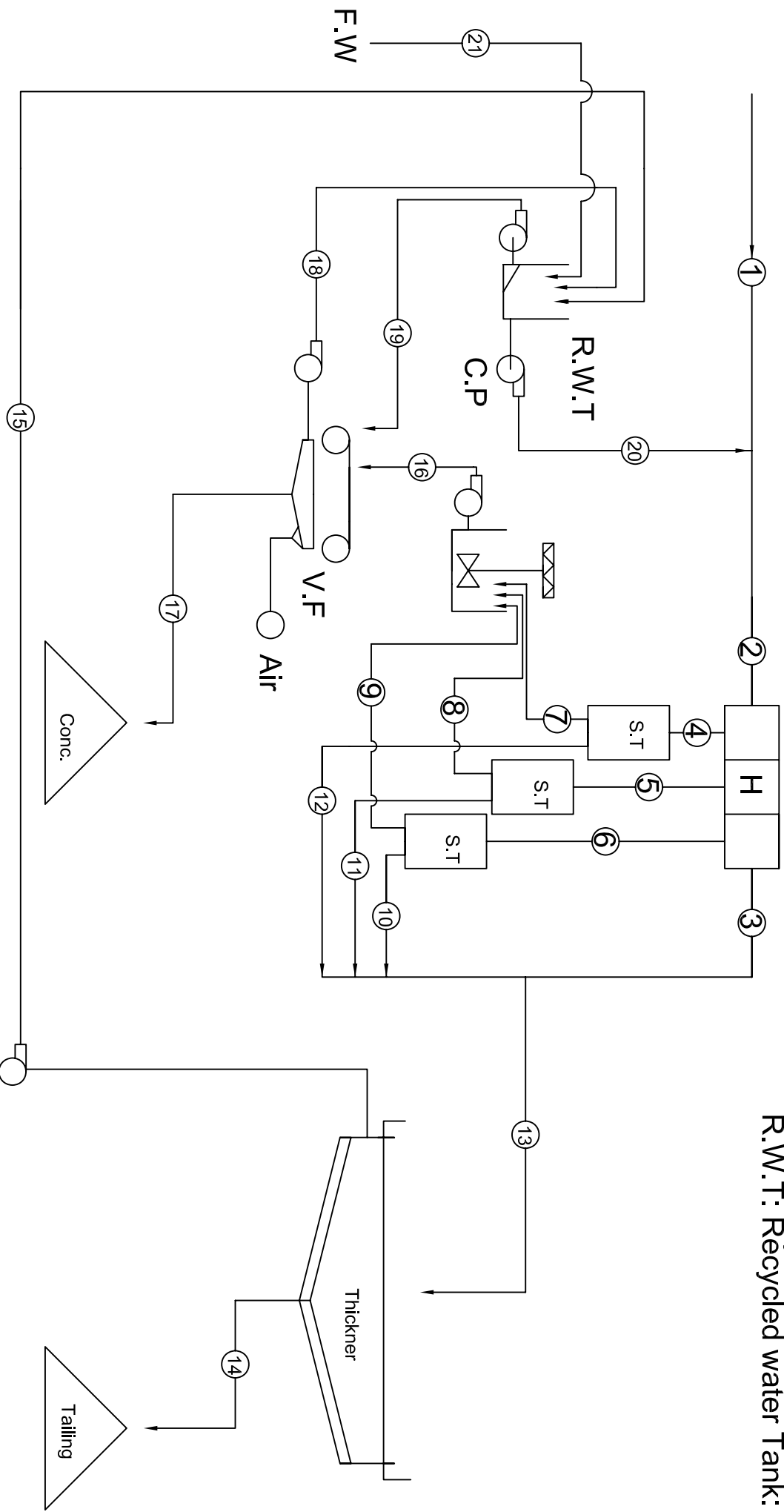


# Group C: Classification circuit



- H: Hydrosizer:
- S.T: Shaking Table :
- V.F: Vacuum filter:
- F.W: Fresh water :
- C.P: Centrifugal pump:
- R.W: Recycled water
- R.W.T: Recycled water Tank:

### **A-Feed size and chemical analysis**

| Size ( $\mu\text{m}$ ) | %wt | % Sn |
|------------------------|-----|------|
| -500+350               | 7   | 0.8  |
| -350+250               | 10  | 0.7  |
| -250+175               | 15  | 0.6  |
| -175+125               | 25  | 0.55 |
| -125+90                | 22  | 0.5  |
| -90+63                 | 13  | 0.45 |
| -63+45                 | 5   | 0.4  |
| -45                    | 3   |      |
| Total                  | 100 |      |

### **B-hydroziser product size analysis**

| Size ( $\mu\text{m}$ ) | %wt    |        |      |
|------------------------|--------|--------|------|
|                        | coarse | Middle | Fine |
| -500+350               | 41     | --     | --   |
| -350+250               | 59     | --     | --   |
| -250+175               | --     | 38     | --   |
| -175+125               | --     | 62     | --   |
| -125+90                | --     | --     | 55   |
| -90+63                 | --     | --     | 33   |
| -63+45                 | --     | --     | 12   |
| -45                    | --     | --     | --   |
| Total                  | 100    | 100    | 100  |

### **B-shaking table results**

| Size D <sub>50</sub> ( $\mu\text{m}$ ) | Water flow( $\text{m}^3/\text{hr}$ ) | Table frequency (rpm) | Title angle (degree) | Concentrate (%Sn) | Tailing (%Sn) |
|--|--------------------------------------|-----------------------|----------------------|-------------------|---------------|
| 350                                    | 3                                    | 200                   | 5                    | 6.5               | 0.06          |
| 350                                    | 3                                    | 200                   | 8                    | 6.8               | 0.055         |
| 350                                    | 3                                    | 200                   | 10                   | 7.2               | 0.045         |
| 350                                    | 3                                    | 200                   | 12                   | 7.5               | 0.03          |
| 350                                    | 3                                    | 300                   | 5                    | 6.9               | 0.055         |
| 350                                    | 3                                    | 300                   | 8                    | 7.3               | 0.04          |
| 350                                    | 3                                    | 300                   | 10                   | 7.6               | 0.043         |
| 350                                    | 3                                    | 300                   | 12                   | 7.7               | 0.040         |
| 350                                    | 3                                    | 400                   | 5                    | 7.1               | 0.089         |
| 350                                    | 3                                    | 400                   | 8                    | 7.4               | 0.076         |
| 350                                    | 3                                    | 400                   | 10                   | 7.6               | 0.073         |
| 350                                    | 3                                    | 400                   | 12                   | 7.7               | 0.069         |
| 350                                    | 3                                    | 450                   | 5                    | 6.8               | 0.065         |
| 350                                    | 3                                    | 450                   | 8                    | 7.1               | 0.089         |
| 350                                    | 3                                    | 450                   | 10                   | 7.3               | 0.092         |
| 350                                    | 3                                    | 450                   | 12                   | 7.4               | 0.097         |

| Size D <sub>50</sub><br>( $\mu\text{m}$ ) | Water<br>flow( $\text{m}^3/\text{hr}$ ) | Table<br>frequency<br>(rpm) | Title angle<br>(degree) | Concentrate<br>(%Sn) | tailing<br>(%Sn) |
|---|---|-----------------------------|-------------------------|----------------------|------------------|
| 350                                       | 5                                       | 200                         | 5                       | 9                    | 0.02             |
| 350                                       | 5                                       | 200                         | 8                       | 7.5                  | 0.03             |
| 350                                       | 5                                       | 200                         | 10                      | 6                    | 0.05             |
| 350                                       | 5                                       | 200                         | 12                      | 5                    | 0.07             |
| 350                                       | 5                                       | 300                         | 5                       | 10                   | 0.02             |
| 350                                       | 5                                       | 300                         | 8                       | 8                    | 0.03             |
| 350                                       | 5                                       | 300                         | 10                      | 7                    | 0.06             |
| 350                                       | 5                                       | 300                         | 12                      | 6                    | 0.08             |
| 350                                       | 5                                       | 400                         | 5                       | 6                    | 0.08             |
| 350                                       | 5                                       | 400                         | 8                       | 5.5                  | 0.09             |
| 350                                       | 5                                       | 400                         | 10                      | 5                    | 0.1              |
| 350                                       | 5                                       | 400                         | 12                      | 4                    | 0.15             |
| 350                                       | 5                                       | 450                         | 5                       | 5.5                  | 0.1              |
| 350                                       | 5                                       | 450                         | 8                       | 5                    | 0.15             |
| 350                                       | 5                                       | 450                         | 10                      | 3.5                  | 0.2              |
| 350                                       | 5                                       | 450                         | 12                      | 3                    | 0.2              |
| 350                                       | 8                                       | 200                         | 5                       | 4                    | 0.15             |
| 350                                       | 8                                       | 200                         | 8                       | 4.5                  | 0.11             |
| 350                                       | 8                                       | 200                         | 10                      | 5                    | 0.09             |
| 350                                       | 8                                       | 200                         | 12                      | 5.5                  | .09              |
| 350                                       | 8                                       | 300                         | 5                       | 5                    | 0.1              |
| 350                                       | 8                                       | 300                         | 8                       | 6.5                  | 0.09             |
| 350                                       | 8                                       | 300                         | 10                      | 6.5                  | 0.07             |
| 350                                       | 8                                       | 300                         | 12                      | 6.8                  | 0.05             |
| 350                                       | 8                                       | 400                         | 5                       | 4.5                  | 0.2              |
| 350                                       | 8                                       | 400                         | 8                       | 5                    | 0.18             |
| 350                                       | 8                                       | 400                         | 10                      | 5                    | 0.15             |
| 350                                       | 8                                       | 400                         | 12                      | 5.5                  | 0.1              |
| 350                                       | 8                                       | 450                         | 5                       | 4.2                  | 0.22             |
| 350                                       | 8                                       | 450                         | 8                       | 4.5                  | 0.19             |
| 350                                       | 8                                       | 450                         | 10                      | 5                    | 0.15             |
| 350                                       | 8                                       | 450                         | 12                      | 5                    | 0.13             |
| 250                                       | 3                                       | 200                         | 5                       | 6                    | 0.09             |
| 250                                       | 3                                       | 200                         | 8                       | 6.5                  | 0.07             |
| 250                                       | 3                                       | 200                         | 10                      | 6.8                  | 0.05             |
| 250                                       | 3                                       | 200                         | 12                      | 7                    | 0.03             |
| 250                                       | 3                                       | 300                         | 5                       | 6.9                  | 0.05             |
| 250                                       | 3                                       | 300                         | 8                       | 7                    | 0.03             |
| 250                                       | 3                                       | 300                         | 10                      | 7.1                  | 0.01             |
| 250                                       | 3                                       | 300                         | 12                      | 7.5                  | 0.007            |
| 250                                       | 3                                       | 400                         | 5                       | 5.5                  | 0.08             |
| 250                                       | 3                                       | 400                         | 8                       | 6.4                  | 0.05             |
| 250                                       | 3                                       | 400                         | 10                      | 6.8                  | 0.045            |
| 250                                       | 3                                       | 400                         | 12                      | 7.0                  | 0.03             |
| 250                                       | 3                                       | 450                         | 5                       | 5                    | 0.12             |
| 250                                       | 3                                       | 450                         | 8                       | 5.4                  | 0.1              |
| 250                                       | 3                                       | 450                         | 10                      | 5.9                  | 0.08             |
| 250                                       | 3                                       | 450                         | 12                      | 6.2                  | 0.06             |

| Size D50 (μm) | Water flow(m <sup>3</sup> /hr) | Table frequency (rpm) | Title angle (degree) | Concentrate (%Sn) | Concentrate (%wt) |
|---------------|--------------------------------|-----------------------|----------------------|-------------------|-------------------|
| 250           | 5                              | 200                   | 5                    | 6.8               | 0.08              |
| 250           | 5                              | 200                   | 8                    | 6.8               | 0.06              |
| 250           | 5                              | 200                   | 10                   | 7.0               | 0.055             |
| 250           | 5                              | 200                   | 12                   | 7.2               | 0.05              |
| 250           | 5                              | 300                   | 5                    | 6.5               | 0.06              |
| 250           | 5                              | 300                   | 8                    | 6.8               | 0.04              |
| 250           | 5                              | 300                   | 10                   | 7.4               | 0.035             |
| 250           | 5                              | 300                   | 12                   | 7.5               | 0.02              |
| 250           | 5                              | 400                   | 5                    | 6.5               | 0.9               |
| 250           | 5                              | 400                   | 8                    | 6.8               | 0.1               |
| 250           | 5                              | 400                   | 10                   | 7.4               | 0.14              |
| 250           | 5                              | 400                   | 12                   | 7.5               | 0.17              |
| 250           | 5                              | 450                   | 5                    | 6.2               | 0.15              |
| 250           | 5                              | 450                   | 8                    | 6.4               | 0.18              |
| 250           | 5                              | 450                   | 10                   | 6.7               | 0.2               |
| 250           | 5                              | 450                   | 12                   | 7.0               | 0.21              |
| 250           | 8                              | 200                   | 5                    | 6.6               | 0.15              |
| 250           | 8                              | 200                   | 8                    | 6.6               | 0.1               |
| 250           | 8                              | 200                   | 10                   | 6.9               | 0.09              |
| 250           | 8                              | 200                   | 12                   | 7.0               | 0.085             |
| 250           | 8                              | 300                   | 5                    | 5.6               | 0.23              |
| 250           | 8                              | 300                   | 8                    | 5.8               | 0.21              |
| 250           | 8                              | 300                   | 10                   | 6.1               | 0.17              |
| 250           | 8                              | 300                   | 12                   | 6.3               | 0.15              |
| 250           | 8                              | 400                   | 5                    | 5.4               | 0.21              |
| 250           | 8                              | 400                   | 8                    | 5.7               | 0.18              |
| 250           | 8                              | 400                   | 10                   | 6.1               | 0.15              |
| 250           | 8                              | 400                   | 12                   | 6.4               | 0.11              |
| 250           | 8                              | 450                   | 5                    | 5.8               | 0.19              |
| 250           | 8                              | 450                   | 8                    | 5.9               | 0.15              |
| 250           | 8                              | 450                   | 10                   | 6.2               | 0.14              |
| 250           | 8                              | 450                   | 12                   | 6.3               | 0.13              |
| 65            | 5                              | 200                   | 5                    | 3.5               | 0.25              |
| 65            | 5                              | 200                   | 8                    | 3.8               | 0.23              |
| 65            | 5                              | 200                   | 10                   | 3.8               | 0.22              |
| 65            | 5                              | 200                   | 12                   | 3.9               | 0.2               |
| 65            | 5                              | 300                   | 5                    | 3.4               | 0.2               |
| 65            | 5                              | 300                   | 8                    | 3.6               | 0.16              |
| 65            | 8                              | 300                   | 10                   | 3.65              | 0.13              |
| 65            | 8                              | 300                   | 12                   | 3.8               | 0.11              |
| 65            | 8                              | 300                   | 5                    | 3.5               | 0.12              |
| 65            | 8                              | 400                   | 8                    | 3.6               | 0.13              |
| 65            | 8                              | 400                   | 10                   | 3.4               | 0.1               |
| 65            | 8                              | 400                   | 12                   | 3.5               | 0.09              |
| 65            | 8                              | 450                   | 5                    | 2.5               | 0.31              |
| 65            | 8                              | 450                   | 8                    | 2.9               | 0.3               |
| 65            | 8                              | 450                   | 10                   | 2.9               | 0.28              |
| 65            | 8                              | 450                   | 12                   | 3.0               | 0.25              |

