3. Aeration and Additional Head Tank

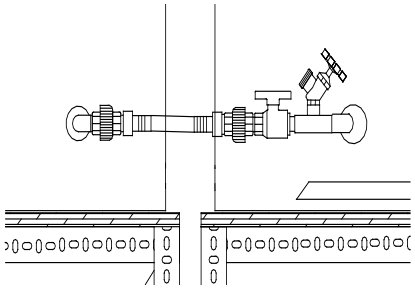
On occasion, it is necessary to add aeration and an additional head tank to the iron removal system. This may be required in situations where there are high concentrations of iron, manganese or hydrogen sulphide. The additional aeration will aid in the oxidation of the iron and manganese and the additional head tank will provide additional detention time for the oxidation to occur. The aeration will also help to release the hydrogen sulphide.

Important Notes:

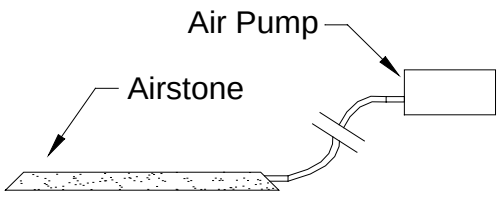
- **All of the assembled components have been loosely fitted together. Use Teflon tape on all threaded connections and tighten. Do Not Over Tighten the PVC fittings. (They will crack if over-tightened)**
- **Refer to Figure 1 to find the locations for all system components.**
- **Heat the end of hose connections in hot water before installing. Use the gear clamps to fasten the hose to the barb fitting.**

Install Assembled Components

Step 1. Position the additional head tank stand so it straddles the storage tank as shown in figure 1. Place the second head tank on the stand.
Step 2. Install the head tank inlet on the first tank and the head tank outlet on the second tank as shown in figure 1.
Step 3. Locate and attach the tank coupler assembly Connect the tank couplers using the ¾" braided PVC hose and geared hose clamps.



- Tank coupler assembly.



- Aeration system.

Step 4. Locate the aeration system. Place the airstone in the first head tank. The air pump can be located on top of the head tank or attached to the wall. Locate the air pump above the full water level in the head tank to prevent water from siphoning to the air pump.
Step 5. Return to the manual and continue with the installation.

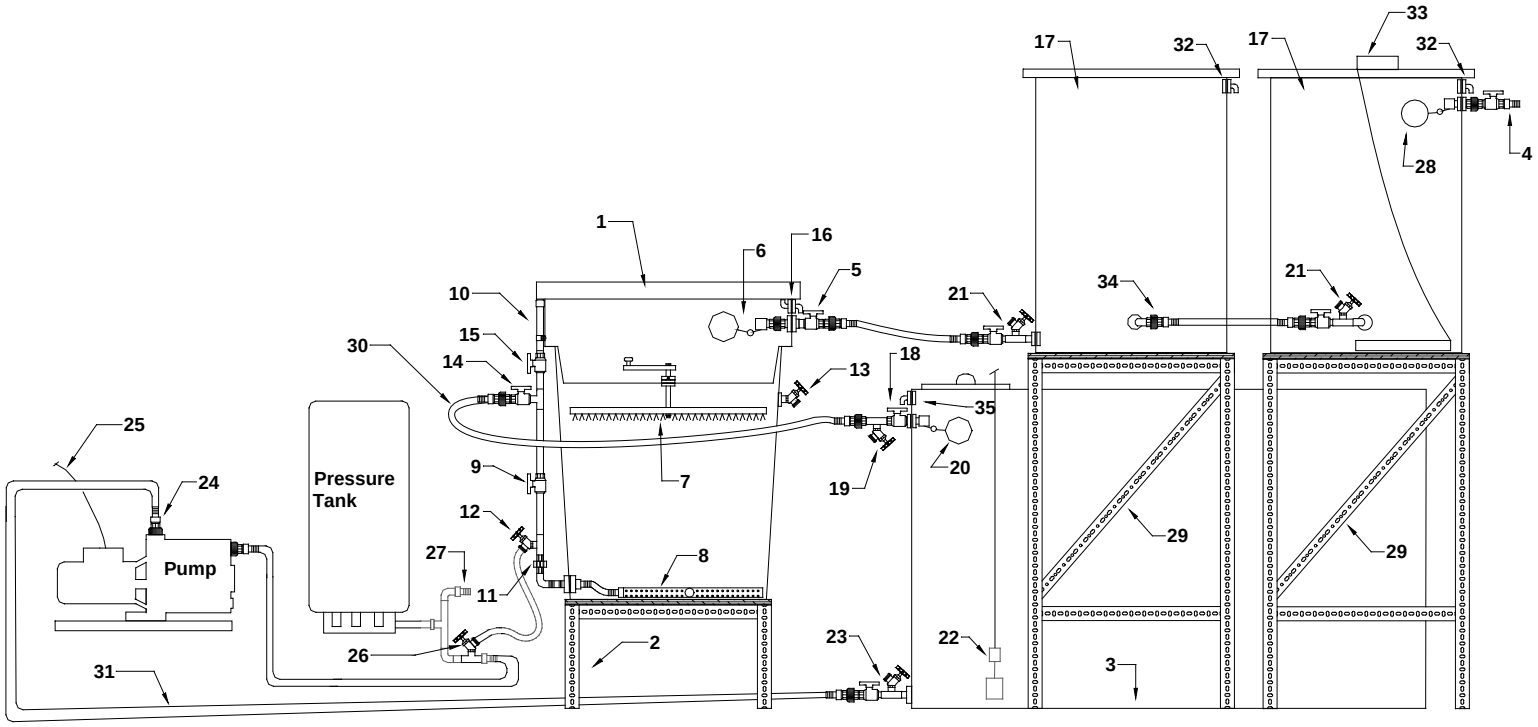


Figure 1 - Automated System Layout - Aeration System and Additional Head Tank

1. BioSand Filter
2. Filter Stand
3. Storage Tank
4. Raw Water Inlet
5. Filter Inlet Valve
6. Filter Float Valve with Union Connection
7. Clean In Place (CIP) and Diffuser Basin
8. Underdrain
9. Flow Rate Control Valve
10. Filter Standpipe
11. Standpipe Union Connection
12. CIP / Reverse Flow Valve
13. Maintenance Drain Valve
14. Filter Outlet Valve
15. Anti-siphon Valve
16. Filter Overflow
17. Head Tank
18. Storage Tank Inlet Valve with Union Connection
19. Sampling Valve
20. Storage Tank Float Valve
21. Head Tank Outlet
22. Low Level Float Switch (to the pump)
23. Storage Tank Outlet with Union Connection, Shutoff Valve and Drain Valve
24. Check Valve
25. Pump Electrical Outlet (to the low-level float switch)
26. Clean In Place (CIP) Reverse Flow (attached to standpipe lower valve)
27. To Distribution or Further Treatment (softener, Reverse Osmosis, UV)
28. Head Tank Inlet Float Valve
29. Head Tank Stand
30. ¾" Braided PVC Hose
31. 1" Braided PVC Hose
32. Head Tank Overflow
33. Aerator (air pump and air stone)
34. Head Tank Coupler
35. Storage Tank Overflow