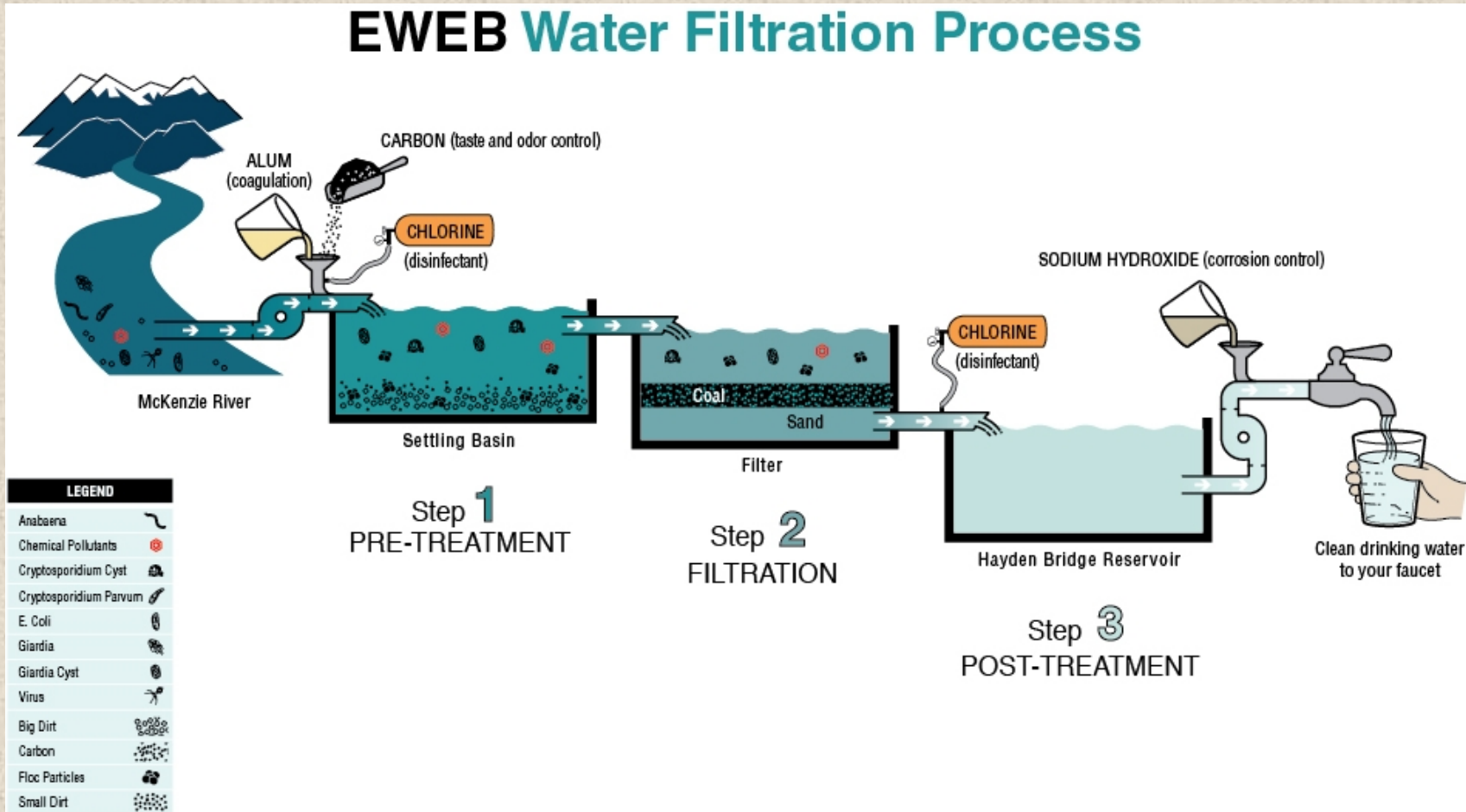


Water Filtration Process

EQ #24- What are the steps used by EWEB to process drinking water?

How is our water treated?

EWEB Water Filtration Process



The Water Filtration Process

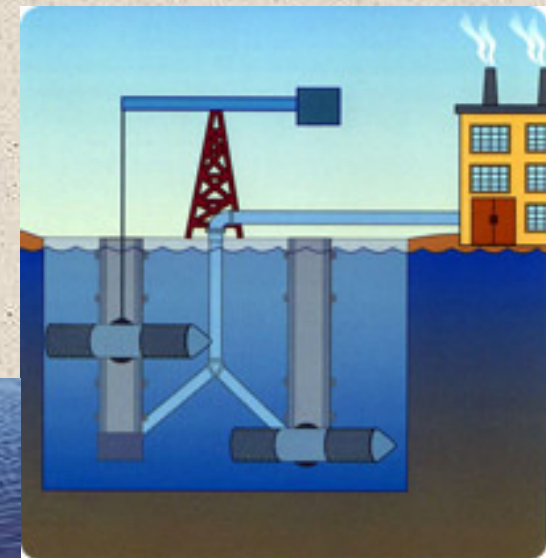
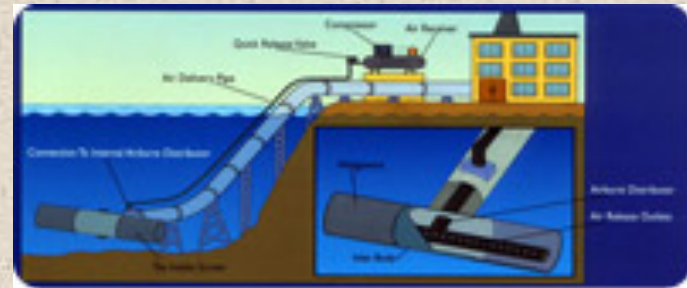
- Is a PHYSICAL & CHEMICAL PROCESS
- **Physical-** Sedimentation / settling; filter
- **Chemical-** for floculation/clumping, to disinfect, to improve taste, to adjust pH

Helen's Fun Facts

- It takes about 7 years for snow in the Cascades to become water in our tap.
- Adding **alum** to our raw river water adds a positive charge to the negatively charged raw water. This makes particles clump.
- The EWEB plant at Hayden Bridge opened in 1950.
- Eugene uses about 20 million gallons of water a day in winter and up to 75 million in summer. Maximum capacity is 85 million/day.

#1 Water Intake

- A large pipe intakes water from the McKenzie River
- T-screens keep out fish, wood debris and silts.
- Screening was significantly updated in 2015.

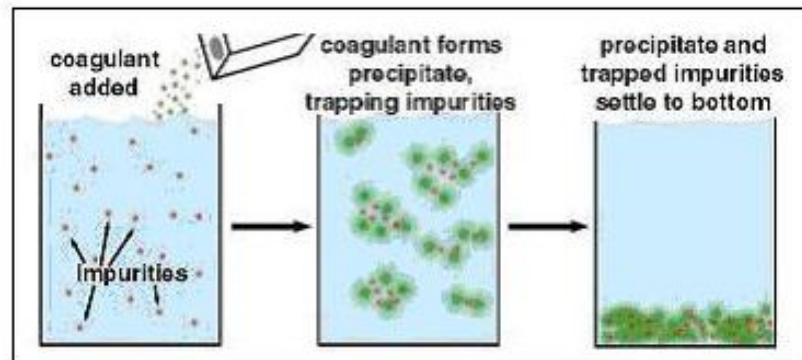


#2 Pre-Treatment

- Chemicals are added after intake:
 1. **Alum:** is added as a flocculant which makes tiny particles clump into larger blobs so they can settle & be filtered out
 2. **Carbon:** Sometimes added to improve taste and odor
 3. **Cat Poly-** Sometimes added to help floc hold together



Steps Coagulation & Sedimentation



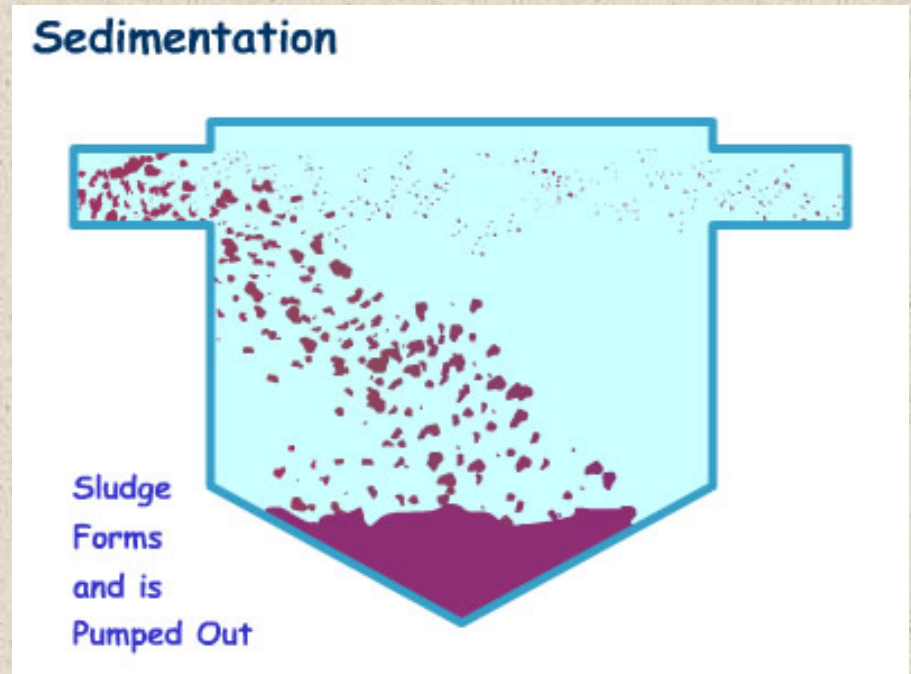
Coagulation/Flocculation/Sedimentation

3. Sedimentation / Settling Basins



#3 Sedimentation / Settling Basins

- The water is slowed down and kept in large basins so clumps of sediment (floc) will sink to the bottom of the settling basins over time.
- These were the first outdoor basins we walked by.

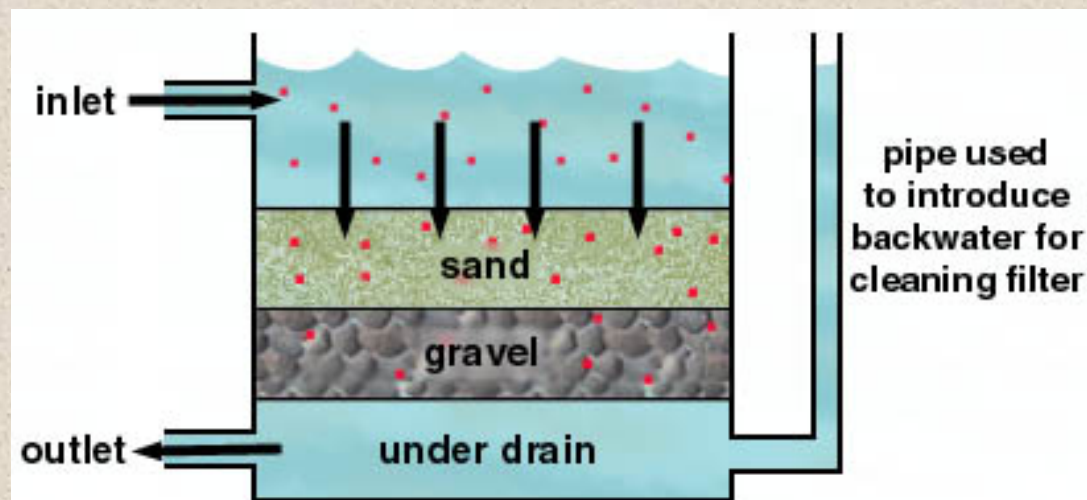


4. FILTRATION



#4 Filtration

- Water is pumped through filters of charcoal and sand composite.
- This removes the remaining sediments and suspended solids that weren't heavy enough to sink during sedimentation



#5 Post-Treatment

- Chlorine is added to disinfect.
- pH is adjusted to 7.9 with caustic soda (NaOH) to reduce corrosion in plumbing systems.
- Finished water is pumped to various reservoirs throughout Eugene where it is available for use by public.
 - Hayden Bridge -College Hill
 - Hawkins -Santa Clara

Filtration Plant Debrief

Questions

- 1 What river does our water come from?
- 2 How much water do we use in an average day in Eugene? When is use highest? Why?
- 3 Why is chlorine added? When is it added?
- 4 Why is the **pH** adjusted and when does this happen?
- 5 What is added sometimes to “sweeten” or improve water taste?
- 6 How much does drinking water cost relative to bottled water?