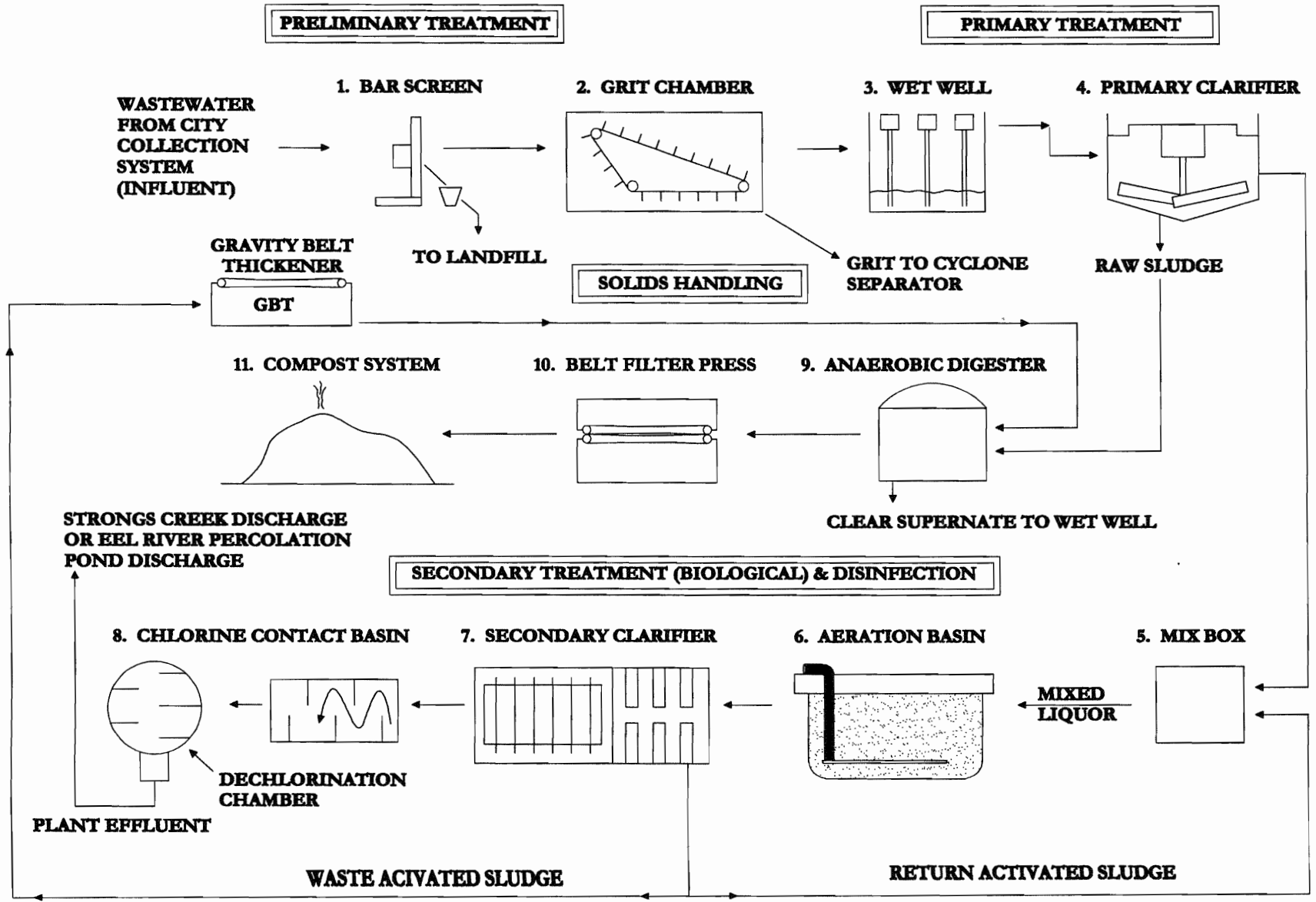


CITY OF FORTUNA WASTEWATER TREATMENT PLANT



WASTEWATER TREATMENT PLANT PROCESS DESCRIPTION

1. **BAR SCREEN** – REMOVES RAGS AND INORGANICS.
2. **GRIT CHAMBER** – FLOW IS REDUCED TO SETTLE INORGANIC SOLIDS (SAND, GRAVEL, EGG SHELLS, ETC.). THIS REDUCES THE WEAR ON PUMPS AND THE DISPLACING OF VALUABLE SPACE IN LATER PROCESSES.
3. **WET WELL** – THIS IS THE ONLY PLACE IN THE PLANT WHERE THE MAIN FLOW IS PUMPED UP. WITH THE EXCEPTION OF SLUDGES THE REST OF THE PLANT IS HYDRAULICALLY DOWN HILL.
4. **PRIMARY CLARIFIER** – WITH DETENTION TIMES OF 1-3 HOURS IT ALLOWS 90-95% OF THE SETTLEABLE SOLIDS TO SETTLE AND COMPACT TO A SLUDGE OF 1-2% SOLIDS WHICH IS PUMPED TO THE DIGESTER. IT ALSO REDUCES THE ORGANIC SOLIDS (BOD) FROM 40-60%.
5. **MIX BOX** – COMBINES THE PRIMARY EFFLUENT WITH RETURN ACTIVATED SLUDGE. (RAS)
6. **AERATION BASIN** – AIR IS ADDED TO THE MIXTURE OF PRIMARY EFFLUENT AND RAS TO ALLOW FOR GROWTH OF AEROBIC BACTERIA, AND THE BREAKDOWN AND STABILIZATION OF DISSOLVED AND SUSPENDED ORGANICS. EXCESS RAS BECOMES WASTE ACTIVATED SLUDGE (WAS) WHICH IS THICKENED AT THE GRAVITY BELT THICKENER (GBT). IT IS THEN SENT TO THE ANAEROBIC DIGESTER FOR FURTHER STABILIZATION.
7. **SECONDARY CLARIFIER** – THIS IS WHERE THE ACTIVATED SLUDGE IS SETTLED OUT AND A CLEAN EFFLUENT IS PRODUCED.
8. **CHLORINE CONTACT BASIN** – CHLORINE SOLUTION IS ADDED AND IS GIVEN A 30 MINUTE TO 2-HR DETENTION TIME TO REACT FOR DISINFECTION OF THE FINAL EFFLUENT. IN THE DECHLORINATION CHAMBER, SULFUR DIOXIDE IS ADDED TO REDUCE THE CHLORINE SO THAT THE FINAL EFFLUENT IS NOT HARMFUL TO RIVER LIFE.
9. **ANAEROBIC DIGESTER** – THE ANAEROBIC DIGESTER COMPLETES THE SOLIDS STABILIZATION PROCESS.
10. **BELT FILTER PRESS** – PERIODICALLY, PART OF THE SOLIDS IN THE ANAEROBIC DIGESTER ARE DRAWN OFF TO THE BELT FILTER PRESS TO REDUCE THE WATER CONTENT TO ABOUT 80%.
11. **COMPOST SYSTEM** – THE SLUDGE FROM THE BFP IS COMBINED WITH A CARBON SOURCE SUCH AS WOOD CHIPS AND MECHANICALLY MIXED. THIS PROCESS IS TO STABILIZE AND REDUCE PATHOGENS. THE FINAL PRODUCTS IS CALLED BIO SOLIDS.