Local Wastewater Management on Salt Spring Island:

Notes from Guest Speaker Megan Gutierrez, Water System Operator, Capital Regional District of Victoria (CRD)

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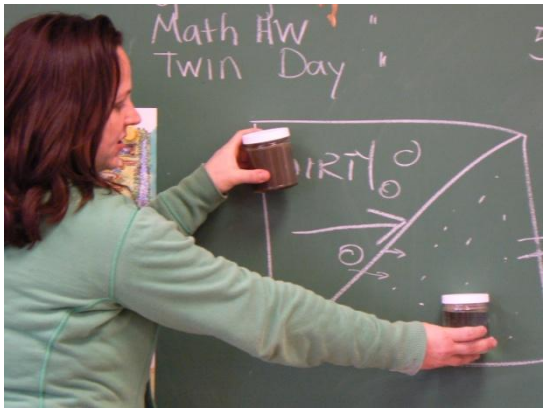
- 550 cubic metres of sewage /day goes through Ganges Waste Water Treatment Plant (WWTP)
- 99.5% of this is water
- it enters the plant at a warm temperature of about 15 degrees Celsius
- it travels in through a 20 cm (8 inch) pipe, that can be as deep as 3.6 m (12 ft) below surface
- the Ganges WWTP treats about 400 properties, including the schools and pool
- the only other sewage treatment plant on Salt Spring Island is for the Maliview subdivision and Grantville
- sewage flows by gravity towards the plant
- lift stations are used to collect some sewage and pump it on to the plant – there is one of these by our Chamber of Commerce
- corn comes into the plant and leaves the plant still looking like corn
- baby toys, plastic things, and money show up in the sewage at the plant
- Hydrogen-sulfide – is a gas that causes a smell like rotten eggs; it is caused by bacteria living in the sewage and eating the poop
- Over Christmas, there is lots of grease that comes through the pipes – it collects on the equipment, hardens, and has to be removed manually



- the Ganges plant uses a membrane bioreactor process
- first step is a 'bar screen' that filters out all large solids including paper products and other inorganic solids
- equalization tank (it makes the flow through the plant more steady and continuous even though sewage tends to flow in heavily at some times and hardly at all some times)
- next step is the bioreactor (big tank of sewage with air going in)
- within the bioreactor are several membranes (bundles of special tubes) that are sucking the water out of the wastewater through tiny pores that keep out the bigger particles of waste
- the membranes look like strings and bunches of thousands of strings suck clean water in, leaving the wastewater in the bioreactor thicker
- the thickened wastewater is run through another set of membranes to remove more water
- After that it is transported by truck to the Burgoyne Bay facility and thickened again using yet another set of membranes
- after that it is "dewatered" using a belt filter press
- that means it goes on a conveyor belt in between some very tight rollers and the liquid is pressed out of it, through the porous belt
- the dry solids that are left after pressing are called 'cake' or 'bricks' and are disposed of in an approved landfill (taxpayers pay for this based on the percent of water in the solids so thickening and water removal is very important)
- the effluent is disinfected by UV lights not a UV filter
- the effluent could be used for irrigation if chlorinated to provide a residual that lasted all the way to the fields it was being used on
- pipes are needed in the ground to get the reclaimed water from the Ganges WWTP to the fields not to bring it back

Settling Tank

all sewage goes into the settling tank , a rake removes inorganic solids, etc

Bio Reacor

=activiated sledge

- the seawge is broken done by the activity of bacteria that eat the organic wastes, oxygen is added (lots of bubbles) for the bacteria to increase their activity

Membrane biologicial reactor

dirty water sewage is passed through a membrane to separate the tiny bits of solids, and this produces "filtrate" - a clear, clean effluent

Effluent

the liquid effluent is passed thru a UV filter to kill all microscopic life in the water and then piped out into the ocean ~200 ft

Solids, or Sledge is trucked to Burgoyne Bay Treament Plant to be processed ad dewatered through a memebrane press, then it is trucked off island to a landfill - run-off from a landfill can spread toxins into the ecosystems

Effluent

the liquid effluent is passed thru a UV filter to kill all microscopic life in the water and then piped out into the ocean ~200 ft It could be reused for irrigation on the soccer fields but would need to be chorinated and there would need to be pipes laid down for the water to travel back