Clear Lake Waste Treatment Facility - 2020

- Fluidyne ISAM (Integrated Surge Anoxic Mix) treatment system
- UV treatment system, lift station, generator
- NPDES permit is required (needs to be renewed once every five years) Current until 2022
- Quarterly, bi-annual, and annual wastewater testing is required
- Treats on average 5,000-7,500 gallons per day (in 2,500 gallon batches)
- Estimated replacement cost $400,000? (at least that amount!)
- Requires a Class II wastewater treatment license to operate, which I have, plus a backup operator (at least Class II level). That is why we have Annette on call. This is per NPDES permit requirements.
- Class II operator requires at least 20 CEUs every two years.

- Work over the last 24 months:
  1. ~~Purchased and installed new lift station pump (across street from John Buggi)~~
  2. ~~Rebuilt lift station pump is now a spare~~
  3. ~~Readjusted lift station floats~~
  4. ~~Replaced several components in electrical panel for lift station~~
  5. ~~Rebuilt and installed aerator pump B in ISAM system~~
  6. ~~New decant valve and related plumbing installed in ISAM system~~
  7. ~~Manual MLSS return valves replaced in ISAM system~~
  8. ~~Exterior of tank of ISAM system spray-foamed with a polyurethane foam insulation~~
  9. ~~Fluidyne engineer visited site for inspection, calibration, training~~

- Work that needs to be done over the next 6-24 months
  1. ~~Replace tank lid over sludge tank at ISAM system (John Buggi?)~~ **Done last week**
  2. Paint polyurethane foam insulation to cover rust from old sludge tank lid (Tone Carlson, can this be done to that product?) Cleanup day project?
  3. Provide water source to plant for easier cleanup. Able to pipe water line from common area wells? Was also a suggestion from State NDEQ (cost?)
  4. Replace test meter ($200)
  5. Rebuild aerator pump A in ISAM system, has over 24,000 hours on it ($2,000)
  6. Replace UV bulbs ($250)
  7. Replacement floats for spares, nine are required for operation ($600)
  8. Replace steps & work platform to access top of treatment system safer ($800)
  9. Purchase PV300 standard controller (to have spare), load current software ($4,000)
  10. Ethernet for remote connectivity. Was also strongly suggested several times from State NDEQ for alarm calls-outs (cost?) This would help greatly to receive alarm via smartphone for myself and Annette.

- Work that should be budgeted for over the next 24-36 months
  1. Replace ISCO sampler ($1,500)
  2. Address rust around frame/ledges of tank (?) **Welders looked at inside sludge tank last week. Okay for now. Would have to shut plant down and drain tank to weld if it gets worse. OHSA Confined Space entry protocols would need to be followed too.**
  3. Replace expanded metal grating on top of treatment system tanks ($1,500)
  4. Aeriation jet aspirating nozzle ($1,200)
  5. Replace equipment to run aeration pumps based on Dissolved Oxygen (DO) need of the effluent versus timed-only which is currently used. Using DO to run aeration pumps should save electricity and extra wear on pumps. Need to do a cost analysis on this first to verify. ($9,000)
  6. Video camera sewer lines to verify integrity of the underground lines, house connections, manholes, etc. ($1.50 to $2.00 per foot). Break this into a five year project?