Ram Pump Detailed Task List Spring 2014

Ruben Ghijsen, Kelly Huang, Ruju Mehta
February 12th, 2014

1 Honduras Performance
   • ask for data/updates from Drew regularly via email (frequently)
   • consult Ariel regarding installation and performance (2/12/14) - Ruben

2 Modify Head Loss System - Ruju/Kelly by 02/13/14
   • test out using flexible tubes instead of PVC pipes (3/8”)
   • purchase whichever system works better

3 Sketch modified overall schematic of system - Kelly (word document) and Ruju(AutoCAD) by 02/19/14
   • higher ODT to obtain higher head comparable to Honduras
   • extend ODT to reduce lab space
   • recycling system that doesn’t require manual operations
   • more compact head loss system
   • email and consult Monroe

4 Rebuild the Ram Pump
   • purchase the parts - All by 02/19/14
   • build the pump (whenever supplies arrive) - All
5 Experimentation

5.1 Reliability
   • run pump for extended periods of time and check for wear points, ease of repair, etc. - (After pump is built, 2/25) All
   • check durability of components from online sources, etc. - (2/15/14) Ruju
   • target is one year of run time between failures

5.2 Efficiency
   • optimize flow rate through modifying the order of components, weights used, and size of air chamber. (After initial testing, 3/5/14) - All

5.3 Scaling
   • modify drive pipe to increase influent flow rate (After initial testing, 3/5/14) - All
   • may require purchasing parts for the ram pump (Depending upon results, 3/10/14) - Kelly

6 Documentation
   • Evaluate whether the pump should be included in the plant design or whether this is a standalone item that we would provide a detailed design for on the website (3/25/14) All