

Sedimentation Tank Controls Detailed Task List

Alexandra Green, Tiago Viegas, and Paul Viesselmeyer

February 3rd, 2014

Team Roles:

- Alex - Team Coordinator
- Paul - Shop/Fabrication Coordinator
- Tiago - Materials Coordinator

Preparation - Alex

Finish by February 21

- Brainstorming meetings with Heidi and Monroe.
- Order materials: tub and cement for simulated sedimentation tank influent weirs. Need couplings, caps, and 8" pipes as well - these materials may be available around the lab. Determine if one apparatus can be used for both the pipe stub and effluent launder testing. Will do tests with the available 6" pipe in the lab, once design has been determined, will be tested on an 8" full scale pipe.
- Construct apparatus.
- Find pictures of San Nicolas/Atima for better visualization and team understanding.
- Possible Literature Review of Summer 2012 Fabrication team's reports and previous testing.

Pipe Stub Removal

Lever - Tiago

Finish by March 7

- Construct/investigate a removable lever arm that can be applied to each different pipe stub.

- Determine best practice for attaching lever to pipe stub. Test different construction techniques for strength and ease of construction.
- Experiment with an adjustable fulcrum point for differing stub heights and sedimentation tank construction.

Impact Mass - Paul

Finish by March 17

- Construction of removable weight/pipe system that can be applied to each pipe stub.
- Test strength and feasibility of design.

Tent Anchor Stake Removal

Finish by March 17

- Investigation of tools available on the market. Is there one that is applicable on the scale of the pipe stubs? What is the economics of such a purchase.
- If product large enough is not available, would custom construction be feasible or affordable.
- Price evaluation and difficulty assessment.

Effluent Launder Caps

Lever - Alex

Finish by April 11

- Construct a lever attachment similar to the pipe stub lever arm.
- The attachment to the cap will probably be the more difficult construction so as not to damage the cap or cause a leak.
- Screw-able cap removal tool
- Examine alternatives to a PVC cap

Fabrication Technique - Paul

Finish by April 11

- Choose best design for each application.

- Improve fabrication of design and make uniform and applicable to multiple plants.
- Investigate bridge construction materials and need.
- Determine where the materials come from, how specifically they are selected (pipe stubs - are they just left over pipe?), what is reasonable amount of effort to be expected in the construction from plant operators.
- Will the construction of the design we decided on be more of a burden than the way they are removing the pipe stubs and caps now?

Floc Probe - Tiago

Complete by May 12

- Probe Tube
- Light reflective issue
- Possible device specifically for Atima
- Sludge judge
- Submersible LED light
- Sound/Optical sensors