Campaign 16

Operations Summary

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Cellulosic Research and Demonstration Plant

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Operations - Campaign 16
06/02/2015 – 06/06/2015

Operation problems & resolutions:

1. Residual biomass after CIP
    a. Problem:
        i. Residual biomass was noticed on the inside of the tank wall prior to start of SIP. It was apparent that our use of only one spray ball for that tank was not adequate – we removed a spray ball from the pH adjustment tank to replace a faulty spray ball in propagator 3. It initially appeared like one spray ball was more than enough for cleaning the pH adjustment tank, but that is now not the case.
    b. Resolution:
        i. A new spray ball was ordered and the installed in the pH adjustment tank.
    c. Status:
        i. Resolved.
2. Loadsure elements
    a. Problem:
        i. Two loadsure elements for the liquefaction pump ruptured within 12 hours of each other. We had not experienced two ruptures in a campaign since we started pumping from the side of the tank. We believe the reason for the ruptures was from either more rocks than usual or the more undigested fiber in the slurry than usual.
    b. Resolution:
        i. There was not much that could be done aside from installing spare loadsures.
    c. Status:
        i. Not resolved.
3. pH Adjustment level
    a. Problem:
        i. The level reading in the HMI was frequently inaccurate.
    b. Resolution:
        i. We tried spraying the sensor with UV water but that did not seem to help.
    c. Status:
        i. Not resolved.
4. Propagator 2A sparger
    a. Problem:
        i. The propagator 2A sparger clogged during cool down after SIP. We believed it clogged because we cooled the tank down too quickly after SIP, when there was still a fair amount of steam in the tank. When the steam suddenly condenses, it sometimes traps itself in the sparger causing clogging.
    b. Resolution:

i. In this particular instance, we had to disconnect the sparger union and blast sterile air (through a non-sterile hose due to time constraint) to dislodge the condensate from the sparger.
ii. Let the tank cool down naturally as long as you can prior to starting a temperature controlled cool down.

c. <u>Status:</u>
i. Resolved.