**Normal SOP for Mitigating Debris Issues at LMN JFF**

Differential between forebay elevation and each gatewell are measured weekly and compared to numbers just after raking trash. If larger differentials are measured, raking of trash racks takes place.

Gatewells are dipped with a crane and basket to remove floating debris before they approach 30% debris coverage. This often occurs several times per week during periods of high debris.

Orifices are checked several times daily by both operators and JFF/Anchor personnel for any debris or disturbed flow patterns. When issues are found, affected orifice is closed, and the opposite orifice in the gatewell is opened until the orifice is cleared and back to normal flow.

Primary Dewatering structure is checked at least 4 times per day to ensure mechanical brush and bubbler system are operating correctly. There are also high water alarms in CR and separator that sounds off if water levels in PDS change rapidly.

Porosity plate entering separator is constantly scraped free of grassy and woody debris to keep a smooth flow into the separator.

Debris is removed by hand every few minutes in separator and placed down chute into dumpster. Biotechs check separator exits by observing outflow and feeling with a special tool at least once every hour.

All tanks and counting tunnels are observed at least once per hour. Special tools have been developed to remove debris from clogged counting tunnels.

Flumes are inspected and checked for debris all day long as techs are walking about.

Raceways are swept of debris with a mechanical crowder at least twice during each 24 hour period. All debris is swept to downstream end of raceway and removed prior to loading onto barges.

Surface debris is periodically removed from raceways throughout the day.

During periods of grassy debris, as we are seeing this year, the grass slides through the incline screen at the PDS and enters supply water system. Therefore, supply diffuser gratings in raceways get clogged and need to be removed and flushed when raceways are dewatered. Technicians are constantly monitoring inches of water flowing over raceway stop logs to ensure adequate supply flow is present in raceways.

\*\*Powerhouse Managers and Supervisory Biologist are currently trying to come up with a good way to get the mat of debris out of the forebay and over the spillway weir. Several ideas have been tested and others are in the process. We are hoping to find a safe method that works to remove this debris and eliminate it before it even enters the system.

 Chuck Barnes