Carden Water Systems

Case Study

LANDFILL LEACHATE

Trip Report Landfill Site-Houston, Texas

9/16/2013

CARDEN Water Systems, LLC demo unit arrived at Landfill site in Houston, Texas.

Set up and testing operations began at 10:30 AM. CARDEN was provided 6 complete sets of sample coolers from Test America. Samples taken. Feed water from the leachate equalization tank was very dark in color with a viscosity equivalent to antifreeze. Leachate feed water pressure for the Nano/Ultra Membrane assembly was 120 PSI. Reject water was flowing at the rate of 2 GPM. Combined permeate flow was unmetered but estimated at 30 gallons per minute.

First run was a combined permeate from the Nano and the Ultra Filters into one 275 gallon tote. Tote filled, the permeate and the reject water recycled back into the leachate feed water tank. That tote of ultra/nano permeate used as feedwater for the RO System. Process pressure and pumping was provided on the skid by 3-2 hp motors @460 volts, 3.7amps, plus a re-circulating1hp pump @ 460 volts, 1.6 amps.

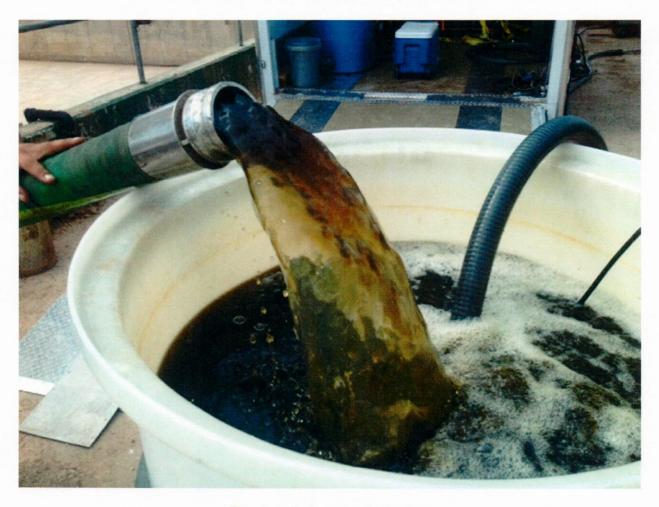
After about a half an hour of operations and continuous running the VVM 6,500 gal feed water leachate tank level was not able to provide enough water to continue the testing. CARDEN operators reconfigured the feed water arrangement and resumed operations and testing.

About 2 pm, the unit was switched over to the RO section and began running the RO test and sampling procedures. Process pressure of 170 psi and pumping for the RO section was provided on the skid by 2-3 hp motors @460 volts, 4.75 amps, plus a re-circulating 1hp pump @ 460 volts, 1.6 amps. Flow rate of the reject water was metered at 2 gallons per minute. RO permeate was unmetered but estimated at 35 gallons per minute.

After all the samples were collected, the CARDEN demo unit was cleaned and all components placed back in the trailer

for pick up in the morning to go to site in San Antonio, Texas .

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Raw Leachate ready for testing

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Analytical Testing Results of Untreated Leachate

