

5/26-Cody had tried to start the system up on Saturday and was getting an alarm for no glycol flow. when I arrived, started pump up and was getting the same alarm. The compressors and the discharge lines were reading in a vacuum on the ammonia system. I shut the pumps off and started looking at the ammonia system. The chiller sight glass column was full, and the float switch was pulled in. The receiver had 2 full sight glasses of liquid. in the past I had seen the receiver empty when all the liquid was in the chiller due to a valve failure. This was too much liquid to have them both full currently. I manually opened the solenoid valve to the chiller on the liquid makeup line and then cracked the hand expansion valve open. when this was opened, I could tell it was brine on the ammonia side of the chiller due to the rumbling in it. Isolated the receiver, compressors and discharge lines. Opened the sight glass column up and I was getting brine out of it. Continued to drain brine and got 160 gallons out of the ammonia side of the chiller. In total we got about 270-280 gallons drained on the chiller. while draining the chiller it would go back into a vacuum and suck in every few minutes even while opened to atmosphere in a couple of locations. I opened the discharge line to atmosphere, and it was in a vacuum, allowed it to equalize. Installed a gauge on the receiver and it was at about 100#s of pressure which was about right for the temperature.

5/27- Removed one end bell on the chiller and could see all the corrosion on the tubes of the chiller. Met with plant personal, Chris and Erik from CSR on sight to evaluate the situation. We then went farther in the system to see where we had brine, it had made its way to two of the heat exchangers. It was decided we needed to remove the other end bell and get someone in to pressure test the tubes. Removed the necessary piping and the end bell. Filled the ammonia side of the chiller with water and could see a couple of tubes leaking. Drained the water out and then filled again to rinse the brine out. 5/28- Met with the boiler company and pressure tested half of the tubes on the chiller. We had 14 leaking out 249 on the top half of the chiller. It was decided not to do any further testing and replace all the tubes due to the way they looked. At this point CSR continued to work on the system by draining oil on the compressor, changing oil filters, drained oil on the oil pot, removed bonnets on compressors to see if they had brine in them, none was found. A sample of brine was taken and sent in to be tested.

5/31- CSR had two welders out to install new valves to rinse the heat exchangers with water. They installed a drain valve on the lower lines to drain brine out of as well. Then they moved hand valves on two water heaters, added flanges and purge valves for future use. These were added in for when it needs to get isolated the whole system doesn't need to be shut down.