A County-owned golf course in Pitman NJ did not have enough water for irrigation. The facility used well water, and had to withdraw more water than their permit allowed in order to satisfy irrigation requirements. The challenge therefore was to provide suitable water quality that satisfied their requirements, and did not exceed the volume that they were permitted to withdraw from the public sewer.

**Evaluation:**

The only local source of water available was a local sewer that passed close to the facility, but on the other side of major divided highway. Dynatec’s DynaLift™ process was selected, since it has proven to provide high quality water with non-detect levels of virus and bacteria, therefore providing safe irrigation for reuse for the golf course.

**The Process:**

1. Wastewater is pumped from a sewer line several hundred yards from the treatment facility.
2. The water is screened to remove larger solids. The screenings are returned to the sewer line via gravity.
3. The screened water is then pumped to the biological system:
   - Two biological trains consisting of anoxic and aerated zones are used to remove both organic constituents as well as ammonia from the waste, producing water with non-detect levels of BOD and low levels of total nitrogen.
4. The mixed liquor is then separated using two DynaLift™ membrane racks
   - The DynaLift™ is an out-of-basin membrane system using 0.03 µm micron ultrafiltration membrane to separate the biomass from the water, producing water with non-detect levels of TSS.
   - The DynaLift™ system is a low-energy system that uses air as a scouring medium to prevent fouling of the membrane. Periodically, the membrane is backwashed – this is the only type of polymeric tubular membrane that is capable of being backwashed – to prevent membrane fouling.
   - The discharged water is stored in a lagoon until required by the golf course. The water is pumped through pipe that was installed by directional drilling under the highway, where distribution pumps are then used to irrigate the golf course.
   - Waste sludge is returned to the sewer line automatically based on operator inputs. The facility is completely self-sufficient, with all waste products being discharged from the treatment building underground, and therefore causing no local smell nuisance to local residents.

**Conclusion:**

The plant operates completely automatically with only limited part-time supervision, and produces the highest quality water in quantities sufficient for the golf course’s requirements. All the air from the operation is vented outside the building, making the operating environment safe and pleasant for the operators. This fact also means that the environment inside the building is no more humid than the ambient atmosphere, resulting in a non-corrosive atmosphere. Building costs therefore are kept modest, since no anti-corrosive measures are required in building design.