

## Tertiary Treatment and Reuse



Filtration

The effluent flow from the secondary clarifiers enters the influent channel on the East side of the two Sand Filters and three Disc Filter tanks. A bypass valve on the East side is for emergencies to send the flow directly to the UV system, bypassing all of the filters.



The flow continues through the channel to the south side where gates allow the flow to enter two 119,725 gallon sand filters. Each filter has the ability to handle 5.4 MG at peak flow. The sand filters by use of head differential and can monitor its own need for back washing by a traveling bridge back washing system.







The effluent flow that enters the Disc Filters gets filtered by going through a 10 Micron filter. The Disc Filters have sprayers that spray off the solids that get attached to the filter panels and are returned to the head of the plant. Each Disc Filter can handle an average flow of 3 MGD and a peak flow of 6.75 MG. The filtered effluent goes over the weirs of the effluent channel of the sand filters or Disc Filters to the influent channel into the UV Building and UV system.







Ultra Violet Disinfection

The UV system disinfects the effluent prior to discharge. The radiation disinfects, by causing the bacteria and virus to mutate, rendering them unable to reproduce. The system can operate manually or automatically, by monitoring the flows. Operators monitor UV intensity (brightness of the lights) and clean the lamps crystal sleeves by placing the UV Banks in one of two acid baths when they become cloudy or dirty (lowering the intensity). When the cleaning is completed the intensity increases.



Re-aeration. In the Post Aeration Basin air is added to meet a 5 mg/l or greater of dissolved oxygen at the effluent outfall before being discharged from the Wastewater Treatment Facility.



Two Aercen Delta air blowers provide air to the Post Aeration Basin where the effluent flows through to ensure permit compliance for dissolved oxygen. The blowers are alternated and run 24 hours each day.



The plant effluent flows through the parshall flume where it is metered before leaving the plant and making its way to the Santa Fe River.

The effluent from the Wastewater Treatment Facility meets all the New Mexico Environment Department requirements to be classified as Class 1B.





Non-potable Water Building



The non-potable water pump(s) system draws filtered disinfected water from the effluent channel to supply clean water for reuse as seal water for various pieces of equipment.



Reclaimed Non-potable Water Reuse Fill Station and Septic Site.





This water is also sold at the standpipe to contractors for use in construction and dust control.



The non-potable reuse pump houses pump the filtered/disinfected non-potable water to various golf courses and sports fields.





The WWTP accepts Septic Sludge up stream from the treatment plant at its Septic Receiving Station.

The City of Santa Fe Wastewater Treatment Facility has two diesel fueled generators and one natural gas fueled generator that are used during long periods of power outages. The generators produce electricity and supply the electricity to certain critical process equipment in the facility until PNM power is restored.

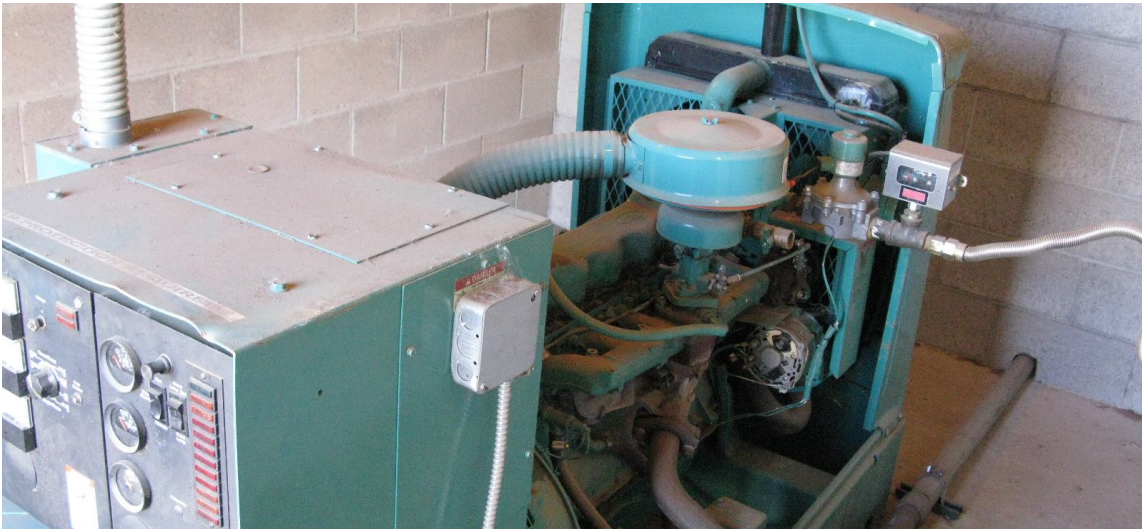


Generator by the Head Works Building supplies power to the equipment in the in the building, the Grit Blowers and the Primary Clarifiers.



Generator by the DAF Buildings supply power to the DAF, Digester and Hoffman Blower Buildings. It also provides power to the Aeration Basin Mixers and the Secondary Clarivacs.





The Generator by the Tertiary Treatment Facility provides power to the Disc Filters and the UV System for filtering and disinfecting the effluent.



The City of Santa Fe has two separate Solar Array installation. These installations provide about one third of the Wastewater Treatment Facility power. The other two thirds power come from PNM. The solar panels shown above rotate following the sun during the day.