

**State of California
California Regional Water Quality Control Board
Santa Ana Region**

Staff Report

September 11, 2020

Item: 9

SUBJECT: STATUS REPORT REGARDING THE CITY OF BEAUMONT'S COMPLIANCE WITH ORDER R8-2015-0026, NPDES Number CA105376, INCLUDING THE CITY'S PROGRESS WITH THE WASTEWATER TREATMENT PLANT AND BRINE LINE CONSTRUCTION PROJECTS (INFORMATION ITEM)

Background:

The City of Beaumont (City) owns and operates the Beaumont Wastewater Treatment Plant (Facility). The Facility receives and treats domestic and commercial/industrial wastewater generated within the City of Beaumont and the Highland Springs area (portions of the unincorporated area of Cherry Valley). The Facility was originally designed and permitted to discharge up to 4.0 million gallons per day (MGD) of tertiary treated wastewater. The Facility now has the capacity to treat up to 6 MGD. Wastewater discharges from the Facility are currently regulated under Order No. R8-2015-0026, NPDES Number CA105376 (Permit).

As shown in Figure 1, the City's treated wastewater is currently discharged to Cooper's Creek, a tributary to Marshall Creek and to Nobel Creek, all of which are tributary to San Timoteo Creek. The discharge to Cooper's Creek and Nobel Creek overlie the Beaumont Groundwater Management Zone (GMZ); however, studies have shown that very little of the wastewater actually recharges into the Beaumont GMZ and that the discharge primarily recharges the San Timoteo GMZ. See Figure 1 for boundaries of these GMZs.

At the request of the Santa Ana Regional Water Quality Control Board (Santa Ana Water Board), staff is providing an update on the City of Beaumont's Wastewater Treatment Plant and salt mitigation facility upgrades. Santa Ana Water Board staff has provided the Board with updates on this project on several occasions, with the most recent update at the September 13, 2019 meeting. The purpose of past updates and this most recent one is to provide information to the Board regarding the City's efforts to comply with their Permit requirements, their Maximum Benefit Program, and the Executive Officer's California Water Code 13267 Investigative Order.

The City's Compliance with the Santa Ana Water Board's 13267 Investigative Order

–The Executive Officer issued an Investigative Order, in accordance with California Water Code section 13267 (13267 Order), on August 25, 2016. The 13267 Order required the City to report on projected sewer connections based on anticipated growth and development plans and to submit (revised) plans and schedules to upgrade the Facility to address both the Facility capacity and the City's "maximum benefit" obligations. In the very early stages of this project the City worked very aggressively to satisfy all requirements listed in the 13267 Order as detailed in **Table A** below. The 13267 Order was issued to ensure that the City's wastewater treatment plant (WWTP) and Brine Line construction projects remained on schedule. The City has satisfied all requirements of the Executive Officer's 13267 Order.

On October 29, 2018, the City received the Notice to Proceed with the construction of the WWTP expansion and Brine Line projects. However, construction activities were soon delayed after the City's long battle with inclement weather during project construction activities. As a result, on June 6, 2019, the City requested a time extension to complete the treatment plant and salt mitigation facilities. The Executive Officer approved the City's request extending the deadline from March 2020 to Sep 2020.

WASTEWATER TREATMENT PLANT CONSTRUCTION

The final design plans for the WWTP and Brine Line included Facility expansion from the current 4.0 MGD to 6.0 MGD by the year 2020. Board staff accepted the City's proposed WWTP and Brine Line design plans, and the City began pre-construction activities on October 30, 2018. All components of the WWTP and Brine Line systems are in place at a total cost of \$62 million. The City is scheduled to complete construction of the WWTP, however as discussed below, final commissioning of the treatment facility is delayed to the end of November 2020. The newly constructed water reclamation facility will utilize activated sludge, membrane bioreactor (MBR), reverse osmosis (RO), and UV disinfection facilities to treat wastewater to Title 22 reuse standards (**See Figure 1**).

Effluent Water Quality

The new treatment plant was designed to ensure compliance with the "maximum benefit" objectives for TDS and nitrate-nitrogen, as well as effluent limits for conventional pollutants as required by the discharge permit. The expected effluent quality is as follows:

- Biochemical Oxygen Demand (BOD) < 20 mg/L
- Total Suspended Solids (TSS) < 20 mg/L
- Total Nitrogen (TN) < 5 mg/L
- Turbidity < 2.0 NTU
- Total Coliform < 2.2 MPN/100 mL
- Total Dissolved Solids (TDS) < 330 mg/L

BRINE LINE CONSTRUCTION

The City's salt mitigation measure includes reverse osmosis (RO) as well as a 23-mile long Brine Line commencing at the Facility and terminating at the City of San Bernardino's connection point to the Inland Empire Brine Line for exporting excess salt. Brine Line construction began on October 30, 2018 and the pipeline was constructed in two separate portions, designated as Reaches 1 and 2, at a cost of \$23 million. The Brine Line was completed in July 2020. See **Figure 3** for Brine Line map.

TITLE 22 ENGINEERING REPORT

The City submitted the Title 22 Engineering Report to the State Water Board's Division of Drinking Water (DDW) in September 2019. Since that time there have been a few rounds of review and revisions. Final documents were submitted by the City to DDW in March 2020. Once the facility is completed, DDW will perform a final inspection to verify the facilities, controls, and alarms prior to issuing a permit for the City to produce recycled water. In addition to the City's permit to produce recycled water, Beaumont Cherry Valley Water District and/or the City must secure a permit to distribute the recycled water for irrigation purposes. To date, the City has not finalized an agreement with the Beaumont Cherry Valley Water District for the distribution of recycled water.

PRETREATMENT PROGRAM

Beaumont City Council approved the Pre-Treatment Program in August 2018. The new Pretreatment Program and enforcement policy are driven by requirements from the Santa Ana Watershed Project Authority (SAWPA) and the Orange County Sanitation District (OCSD) to qualify future discharges to the Inland Empire Brine Line. Santa Ana Water Board Staff has received and accepted the City's Pretreatment Program. The Pretreatment Program will be effective after Santa Ana Water staff incorporates the program into the Permit for the WWTP and the Santa Ana Water Board adopts the Permit.

Table A

13267 Investigation Order Compliance

Compliance Item	Compliance Task	Status
1	By May 30, 2017, conduct an inflow and infiltration study.	Completed on May 22, 2017.
2	By October 17, 2016, provide an accurate estimate of future dwelling units.	Completed on October 17, 2017.
3	Provide a complete list of existing and proposed commercial and industrial facilities by December 15th and June 15th beginning December 15, 2016.	Completed on December 10, 2016, the City submitted the list of commercial and industrial users within the City's service area.
4	By December 31, 2016, submit an Exceedance Prevention Capacity report.	Completed on January 3, 2017.
5	By December 31, 2016, submit a Feasibility Study for expansion of the WWTP.	Completed on January 3, 2017.
6	By May 31, 2017, complete a preliminary design for either option 1 or option 2 and submit that design to the Santa Ana Water Board.	Completed on December 15, 2016.
7	By December 31, 2017, provide a financing plan for the final plant expansion.	Completed on September 27, 2019.
8	By December 31, 2017, develop and submit to the Santa Ana Water Board the final plant expansion project design.	Completed on December 29, 2017.
9	By December 15th and June 15th of each year beginning in December 2016, submit the City's Average Dry Weather Flow Report.	In Compliance: The City has submitted the required reports from the period of September 2016 through December 2018.
10	On a monthly basis and commencing on September 15, 2016, provide 12 months of influent continuous pH and electrical conductivity (EC) readings.	In Compliance: The City has submitted the requested monthly influent and EC data.

Conclusion

The City has worked at a very aggressive pace to maintain compliance with the Santa Ana Water Board's 13267 Order for compliance with the Basin Plan and corresponding Maximum Benefit Program. Following discussion at the September 13, 2019 Santa Ana Water Board meeting, the Santa Ana Water Board approved extension of the City's compliance deadline, for bringing expanded treatment capacity and salt reduction facilities online, to September 30, 2020. The Executive Officer sent the time extension approval to the City on October 1, 2019. Since that time, the City has worked diligently to complete the project on time. There have been a few complicating factors affecting the project construction. Each have had an impact as described below:

- The COVID-19 pandemic has impacted equipment delivery. The MBR equipment is being supplied by Fibracast in Toronto Canada. Their production capacity has been affected due to stay-at-home orders, and once fabrication was re-established there were delays in shipping from Canada to the United States due to international border closures.
- Southern California Edison (SCE) was delayed supplying new power to the WWTP. The SCE delays pushed the startup schedule back by at least 2 months.

Despite the delays due to COVID-19 and power supplies, the City has completed the construction of the WWTP and Brine Line facilities. However, the WWTP must be fully commissioned prior to the full operation of the system. The commissioning process includes a 60-day equipment testing procedure for both the MBR system, and RO system. The first 30-days of testing includes transferring mixed liquor from the existing treatment plant to the new MBR system. This step is crucial to establish and stabilize the biological processes prior to directing flow to the RO system for salinity reduction.

Upon completion of the 30-day MBR testing, the second phase of commissioning involves a 30-day test of the reverse osmosis treatment system and Brine Line. This testing involves setting up the RO equipment, fine tuning the chemical dosing equipment, pH adjustment, adjusting flow rates, and monitoring TDS removal. It should be noted that during the MBR and RO test periods, the WWTP will be treating wastewater and removing excess salinity as required by the NPDES permit and Maximum Benefit requirements for the plant. The Plant flow will be slowly increased throughout the testing phase until all flow is eliminated from the old facilities. Unfortunately, the 60-day commission testing may cause the City to fail to comply with the September 2020 deadline for full operation of the WWTP. Therefore, the City has requested an additional 60-day extension of the September 2020 operational deadline to November 2020.

Lastly, Board staff is working on the Permit update for the WWTP and expects to have the Permit ready for adoption by early 2021.

Staff Recommendation

The City has worked diligently to comply with and has met all requirements of the Executive Officer's 13267 Order. However, the COVID-19 pandemic has led to circumstances out of the City's control that prevent the WWTP to be fully operational by September 30, 2020. Therefore, Board staff believes that the City's request for additional time to ensure that the WWTP systems are operational is appropriate and recommends that the Santa Ana Water Board grant the City's request for a 60-day extension to November 30, 2020.

Figure 2



Figure 2 - WWTP Site Plan
Beaumont WWTP

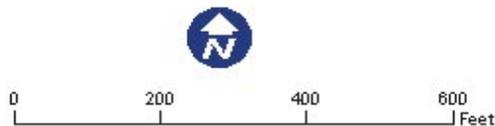


Figure 3

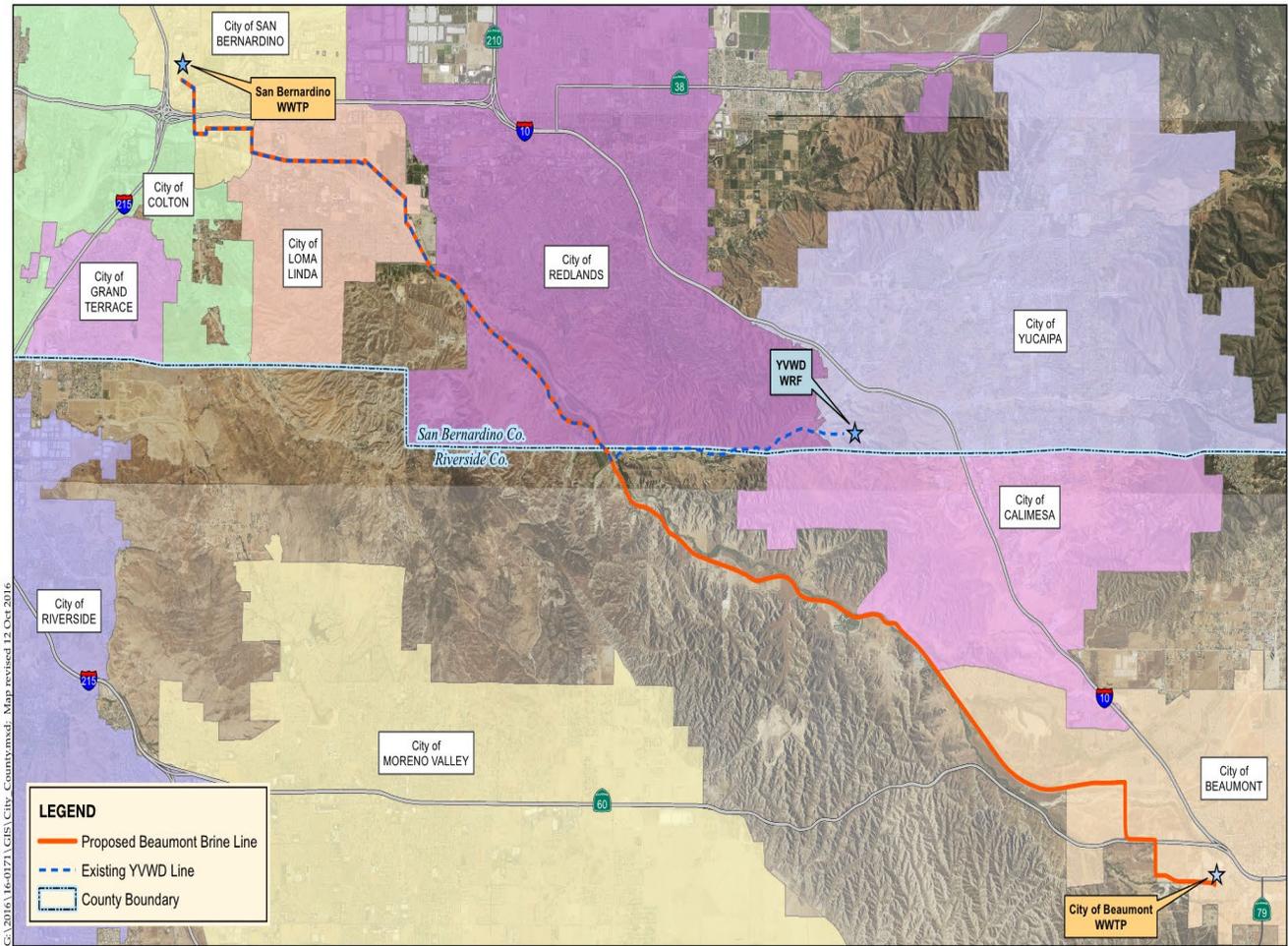


Figure 1a - Cities and Counties, Option 1

City of Beaumont WWTP

