



# SAN JACINTO RIVER AUTHORITY

## Woodlands Division MUD Report for April 2019

### WASTEWATER

Parameter	WWTF No. 1 (Outfall 001)		WWTF No. 2		WWTF No. 3	
	<u>Permitted</u>	<u>Reported</u>	<u>Permitted</u>	<u>Reported</u>	<u>Permitted</u>	<u>Reported</u>
Flow (avg.-high; MGD)	7.8 avg.	3.238 – 4.420	6.0 avg.	3.692 – 4.426	0.9 avg.	0.526 – 0.644
2-Hour Peak Flow (MGD)	18	04-7-2019	15.56	04-18-2019	3.6	04-18-2019
Rainfall at Highest Peak		7.490 1.10"		7.270 1.86"		1.020 1.50"
CBOD5 (30 Day avg.; mg/l)	10	4.2	10	3.9	10	6.1
TSS (30 Day avg.; mg/l)	15	3.8	15	3.0	15	7.0
NH3-N (30 Day avg.; mg/l)	3	0.3	2.6	0.9	3	0.3
pH (min-max)	6.0 - 9.0	6.81 – 7.35	6.0 - 9.0	6.28 – 7.59	6.0 - 9.0	6.80 – 7.60
DO (minimum; mg/l)	4.0 (min)	6.38	4.0 (min)	6.13	6.0 (min)	7.16
Disinfection (max Cl2; mg/l)	0.1 mg/l	0.07	0.1 mg/l	0.05	1 mg/l (min) 4 mg/l (max)	1.02 3.51
E.coli (max col/100 ml)	200	*1840	200	4.0	399	2.0

\*E-coli violation for WWTF1 on April 29<sup>th</sup>. Cause of elevated results are being investigated.

### WATER

Parameter	March 2019		April 2019	
	Groundwater	Surface Water	Groundwater	Surface Water
Average (gal/day)	8,449,000	3,664,000	9,872,000	4,452,000
Minimum (gal/day)	1,330,000	3,092,000	7,034,000	4,000,000
Peak-day (gal/day)	12,809,000	4,192,000	12,236,000	5,275,000
Monthly (gallons)	261,905,000	113,588,000	296,154,000	133,558,000
Percentage GW/SW	68%	32%	68%	32%
Average Avail. Capacity	64,567,000	NA	63,162,000	NA
Rainfall (inches)	0.76		3.84	
Total Usage	375,493,000		429,712,000	
Fiscal year-to-date blend	58% GW / 42% SW			

(Total water usage decreased 8.03% compared to April 2018) Cumulative Total Water Usage: 1,346,662,000 gallons - April 2019

### ENVIRONMENTAL

Parameter	April 2019
Current Total Permits	466
Interceptor Inspections	143
Enforcement Action Taken	9

## PROJECT UPDATE

(As of April 30, 2019)

Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
1	WPSP1 – Wastewater Treatment Facility No. 1 Solids Processing  <u>Bond funded</u>	The contractor was given Notice to Proceed on December 5, 2018. The foundation and the first floor columns have been completed. The contractor is currently working to form up the second floor slab.	Design \$630,000  Construction \$5,519,000	Design \$564,965  Construction \$5,220,727	\$5,785,692	\$683,347	Oct 2019
	WT1DW – Wastewater Treatment Facility No. 1 Additional Sludge Dewatering Unit  <u>Capacity funded</u>	This project will be completed in conjunction with WPSP1 (above). WT1DW is a capacity project providing the additional belt filter press for the project.	Design \$16,721  Construction \$1,190,000	Design \$18,670  Construction \$949,255	\$967,925	\$30,876	

Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
2	WW1701 – Wastewater Treatment Facility No. 2 Disinfection System Improvements	Substantial completion walkthrough on April 23, 2019. Contractor is in the process of correcting punch list items and preparing closeout documentation. Contractor has also provided training on multiple items.	Design \$448,000  Construction \$6,500,000	Design \$439,245  Construction \$6,327,404	\$6,766,650	\$6,413,306	Apr 2019
3	WWFM5R – Lift Station No. 5 Force Main Replacement	Design of the project is ongoing. The consultant completed the 90% design on May 07, 2018. The 100% design submittal is underway; however, final completion is pending easement acquisition along McDonald Road. Easement acquisition is in progress. Completion of easement acquisition is anticipated to be complete by early summer 2019.	Design \$688,000  Construction \$4,510,000	Design \$537,496  Construction TBD	\$537,496	\$252,397	May 2021
4	WWBBGM – Rehabilitation of Bear Branch Gravity Main <u>Bond funded</u>	The design consultant provided the 90% design submittal on January 22, 2019. Final design revisions are in progress. Contractor access routes and construction staging sites have been identified and developed, and have been discussed with landowners. Easement documents have being prepared to acquire the temporary easements, and are in the process of being obtained. Also,	Design \$1,882,000  Construction \$16,299,000	Design \$1,065,459  Construction TBD	\$1,065,459	\$370,308	Apr 2020

Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
		we have been coordinating with Cochran's Crossing Village Association.					
5	WWF3LS – WWTF No. 3 Lift Station Rehabilitation	Partial Substantial Completion was issued on December 19, 2018 and punch list items were generated. Punch list items are now complete.	Design \$237,000  Construction \$1,577,000	Design \$126,366  Construction \$543,193	\$669,559	\$636,766	Feb 2019
6	WWLS4R – Lift Station No. 4 Replacement (Crystal Lake Lane)	Contractor continues installation of on at- grade foundations, mechanical, and plumbing installations. The new generator was delivered to the site and installed. Electrical subcontractor is working on connections to put system online. Contractor is also working on some ongoing issues with a 3 manholes that were installed at the beginning of the project.	Design \$266,000  Construction \$1,459,000	Design \$235,155  Construction \$1,350,419	\$1,585,574	\$1,288,574	Aug 2019
7	WWLS23 – Lift Station No. 23 Rehabilitation (Baker Hughes)	Startup of site occurred on February 14, 2019 with no issues and partial substantial completion on March 1, 2019. Contractor has completed all punch list items.	Design \$68,000  Construction \$372,000	Design \$103,012  Construction \$500,840	\$603,852	\$551,503	Mar 2019

Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
8	WA17WL – Water Distribution – Looping Water Mains	Contractor has completed all punch list items and working on document closeout for the work on Research Forest Drive, Ken Lakes Drive and FM2978/Chipwyck Way. The replacement of the 12-inch water line crossing Panther Branch at Grogan’s Point has been added to this project. The construction contract for Alcott, Inc. dba TCA was approved at the SJRA Board of Directors meeting on February 28, 2019. Contractor mobilized April 30, 2019 to install low water crossings, survey, and mobilize equipment and materials.	Design \$198,000  Construction \$972,000	Design \$36,708  Construction \$709,609	\$746,317	\$409,629	May 2019
9	WW17GR – Gravity Main Rehabilitation – Segments 35, 50, and 50A	Notice to Proceed was issued to contractor on December 17, 2018. Contractor completed cleaning and televising, and CIPP of Segment 35 (Sawdust and Grogan’s Point). Contractor setting up diversion bypass pumps and piping for Segments 50 and 50A (W. Isle Place, Leeward Cove Dr. and Pleasure Cove Dr.). Installation expected to be completed mid to late-April, at which point cleaning and televising of the segments will commence.	Design \$60,000  Construction \$1,328,000	Design \$61,396  Construction \$1,277,079	\$1,338,475	\$372,143	Jul 2019

Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
10	WWF1AB – WWTF No. 1 Replacement of Aeration Basin Nos. 1 and 2 <u>Bond funded</u>	Preliminary design is ongoing. Options for design were evaluated and discussed. The design consultant submitted a draft Preliminary Engineering Report (PER) on March 3, 2019. The Consultant is addressing comments on the Draft PER and preparing the Final PER. SJRA has advertised a Request for Qualifications (RFQ) for a final design consultant, with responses due May 31, 2019.	Design \$1,191,000  Construction \$5,279,000	Design \$500,863  Construction TBD	\$500,863	\$379,347	Mar 2022
	WW1AB – WWTF No. 1 Replacement of Aeration Basin Nos. 1 and 2 <u>Capacity funded</u>	This project will be completed in conjunction with WWF1AB. WW1AB is a capacity project providing additional treatment capacity for the project.	Design \$117,000  Construction \$1,920,000	Design TBD  Construction TBD	\$0	\$0	

Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
11	WARB34- Water Well No. 34 Rehabilitation	SJRA performed in-house design for the rehabilitation of this water well following an inspection of all the components. The construction project is scheduled to advertise on May 3, 2019.	Design \$0  Construction \$300,000	Design \$24,240  Construction \$29,115	\$53,355	\$50,409	Jan 2020
12	WWSES – Sanitary Sewer Transmission Assessment and Renewal (SSTAR) Program – Phase I Project	Phase I project consists of planning-level engineering to identify and investigate areas of excessive infiltration and inflow in the wastewater collection system, while conducting a condition assessment. The consultant completed field investigation to verify locations for flow monitoring equipment in January 2019. The consultant completed installation of rain gauges and flow monitoring equipment in February 2019. Flow and rainfall data collection started March 1, 2019. A condition assessment of lift stations was conducted in April 2019.	Planning \$1,510,000	Planning \$1,758,675	\$1,758,675	\$249,109	Aug 2020

Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
13	WW2MCC - Wastewater Treatment Facility No. 2 Plant Process Water (PPW) Motor Control Center (MCC) Replacement	This project includes the engineering services for the final design and procurement assistance for WWTF No. 2 PPW MCC replacement. The 100% design package was submitted and reviewed by SJRA in April. The project is scheduled for advertisement on May 10, 2019.	Design \$64,000  Construction \$322,000	Design \$52,151  Construction TBD	\$52,151	\$43,642	Mar 2020
14	WA4GT2 - Water Plant No. 4 Ground Storage Tank No. 2  <u>Capacity Funded</u>	This project is for the construction of a second ground storage tank at Water Plant No. 4. Final Design currently under review by TCEQ. Expected to receive any comments no later than July 10, 2019.	Design \$620,000  Construction \$3,413,000	Design \$244,436  Construction TBD	\$244,436	\$127,462	Dec 2020

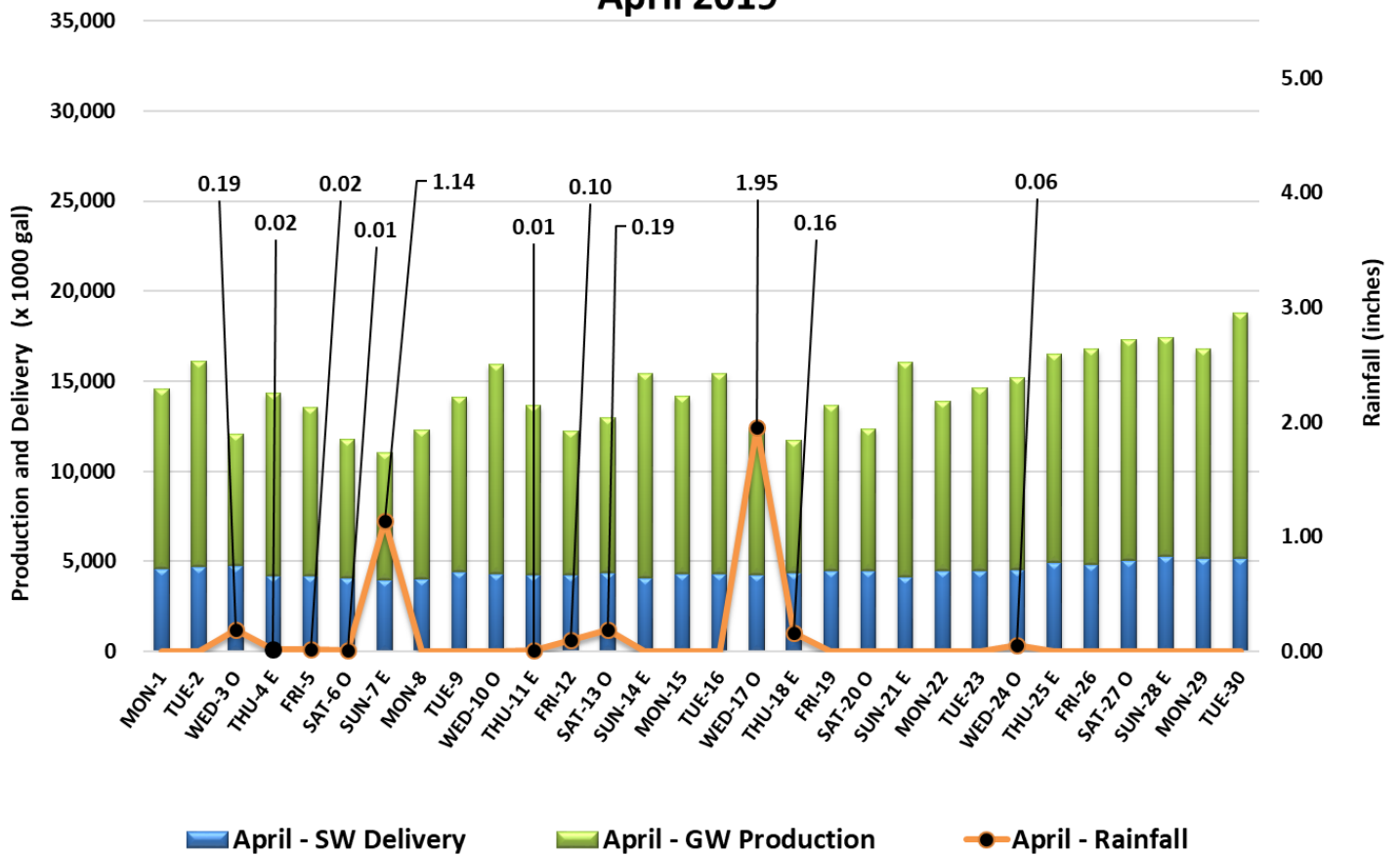


Item	Project Description	Project Highlights	Budget	Contract Amount	Total Contract Amount to Date *	Invoiced to Date	Estimated Completion Date
15	WW19LS – Lift Station No. 13 Rehabilitation	Notice to Proceed for preliminary design was given on December 5, 2018. A kickoff meeting was held on December 8, 2018. Consultant provided the final PER on February 14, 2019. The final design contract with Kimley-Horn and Associates, Inc. was approved at the SJRA Board of Directors meeting on April 25, 2019. A Notice to Proceed for final design will be provided in early May.	Design \$266,000  Construction \$1,460,000	Design \$235,303  Construction TBD	\$235,303	\$73,861	Aug 2021
16	WA19WR – Rehabilitation of Water Well Nos. 25 and 31	This project was designed in-house by SJRA to rehabilitate two water wells. This project will not increase the capacity of the wells, but repair and replace worn or damaged components. The well pump assemblies will be lowered by 100 feet at both locations. The construction contract for Weisinger Incorporated was approved at the SJRA Board of Directors meeting on February 28, 2019. Contractor mobilized to Well 25 and removed the motor on April 30, 2019 in preparation to start down hole well stem rehabilitation.	Design \$20,000  Construction \$440,000	Design \$75,987  Construction \$436,127	\$512,114	\$41,250	Feb 2020

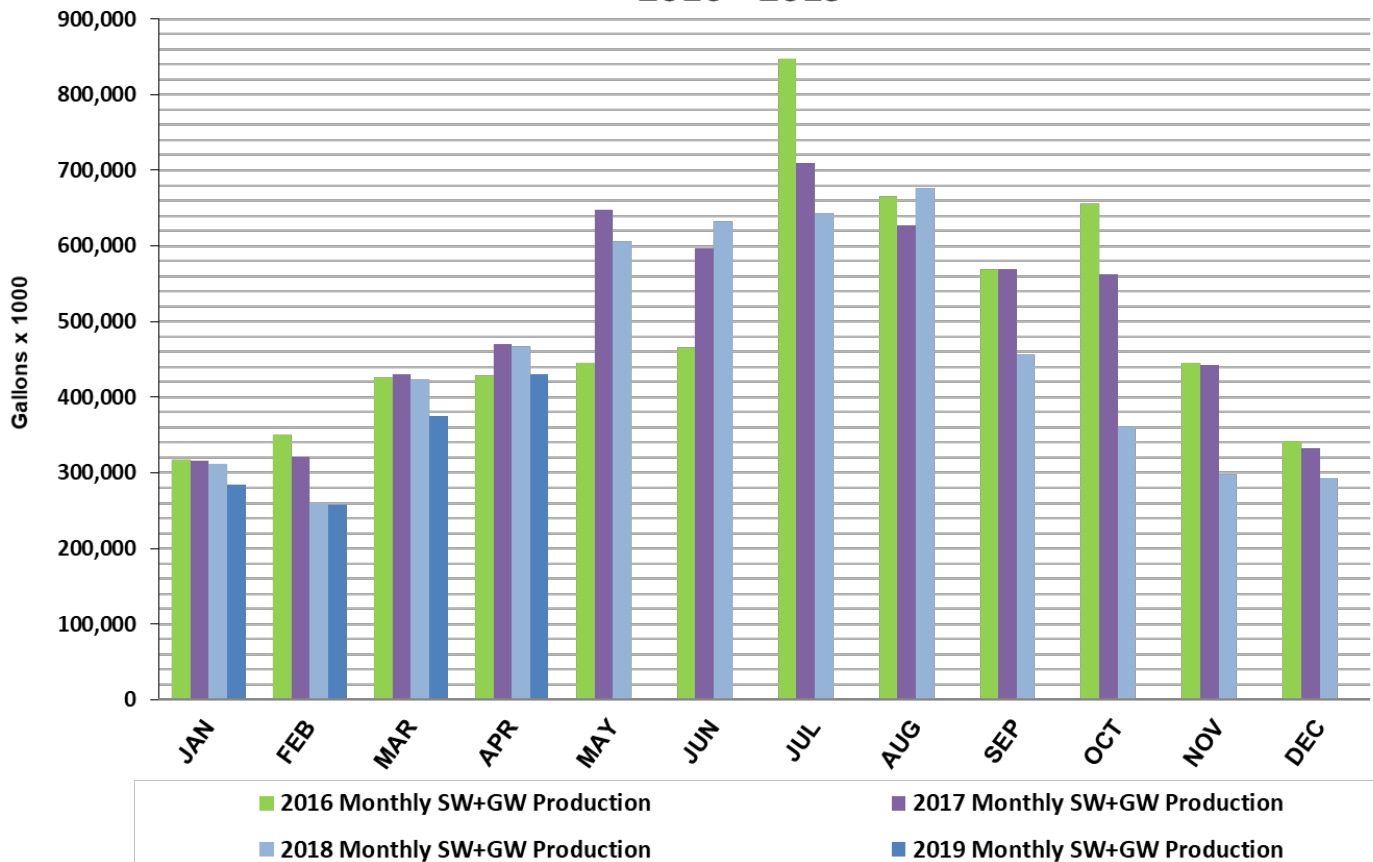
**Note:** Total Contract Amount to Date also includes costs of public advertisement for construction bids/proposals.

Project is complete and no further invoices are anticipated.

## Woodlands Production, Delivery and Rainfall April 2019



## Woodlands Production and Delivery 2016 - 2019



# SJRA SANITARY SEWER TRANSMISSION ASSESSMENT & RENEWAL (SSTAR) PROGRAM



APRIL 2019

## ABOUT THE SSTAR PROGRAM

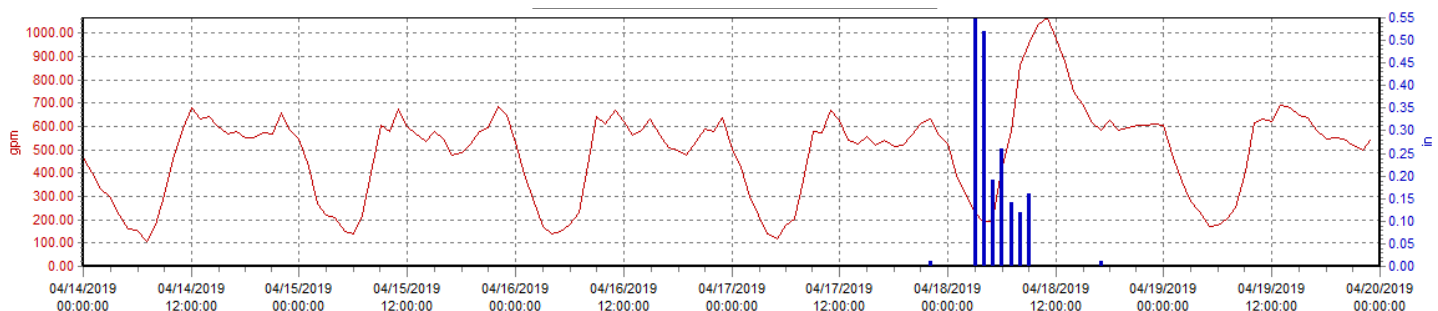
The SSTAR Program is a community-wide, comprehensive assessment of the aging wastewater collection system in The Woodlands. The SSTAR Program is being conducted in two steps. The first step uses flow meters installed in pipes and rainfall monitoring to identify and quantify inflow and infiltration (I&I) in the system. The second step is a visual condition assessment of the wholesale system to assist with prioritizing rehabilitation projects for pipes, manholes, and pump stations by determining when rehabilitation is needed. These two steps will assist in prioritizing areas for further inspection and rehabilitation, and ultimately repairing those areas to improve the Woodlands system. By maintaining the system before it fails, there will be a reduced chance for sewage overflows into homes, businesses, and the environment.

## PROJECT UPDATE APRIL 2019

Since March 1, the SJRA and its consultant have been collecting sewer system flow and rainfall data for analysis of I&I. In that time, two significant rain events have occurred. On both occasions, increases in flows were observed throughout the collection system. The data is being analyzed currently to determine the relative amounts of I&I in different areas (or "sub-basins") within the SJRA system, to aid in prioritizing additional inspections and rehabilitation of aging sewer pipes.

Below is an example of the information gathered from one flow meter and rain gauge during a rain event that occurred on April 18, 2019. The red line represents the wastewater flow in a 42-inch-diameter sewer line. Typical daily peaks and valleys of flow rate were observed on the "dry weather" days preceding the rain event (the daily patterns are due to fluctuations in usage during various hours of the day). The blue bars represent rainfall amounts in 30-minute intervals. The total rainfall for the event was approximately 2 inches of rain. Immediately following the rainfall, a corresponding increase in the sewer line flow rate was observed to occur in the late morning on April 18th. **Data similar to the chart below is being collected and analyzed for over 60 flow meters located throughout The Woodlands, during dry weather and wet weather events.**

Wastewater Flow  
Rainfall



## System Response During April 18<sup>th</sup> Rainfall Event

### CONTACT:

Aaron Schindewolf, PE | [aschindewolf@sjra.net](mailto:aschindewolf@sjra.net) | 281-367-9511

