

# **CITY OF ST. JOSEPH WATER FILTRATION PLANT**

## **OPERATIONAL REPORT**

**APRIL 2022**



### **Mission Statement**

**WSJOB- The City and Authority working together to provide safe drinking water of the highest quality to all of our customers at the lowest possible price.**

## **WATER PLANT/DISTRIBUTION REPORT- APRIL 2022**

Water demand in April was down by 8,955,973 gallons representing a 10.0% decrease from 2021. This year 81,200,791 gallons were delivered which compares to 90,196,764 gallons in 2021. The April 2022 pumpage ranks 30<sup>th</sup> in the thirty-year tabulation dating back to 1993.

### **GENERAL ACTIVITIES**

#### *Corrosion Control Study*

The bid opening for the corrosion control study was held on May 12<sup>th</sup> in the commission chambers of City Hall. Staff is seeking a consultant to assist in the development of a pipe loop study, conduct a table top study and analyze lead and cast iron pipe samples.

#### *Boiler Replacement*

Staff issued an RFP for replacement of the north boiler at the water plant. Bid opening is in June. The north boiler is a Bryan Flexible Tube Model CL-150 that was installed when the plant was expanded in 1974. The tubes are badly corroded. Replacement would be provided by two Fulton brand or equivalent system. Twin boilers would be more economical and provide redundant service in so far as a single unit would be rated to heat the building. A pre-construction meeting is schedule for the week of 5/16. The RFP was advertised in the Herald Palladium, MITA and posted on the City of St. Joseph website.

#### *SCIP Phase II Design and Construction Engineering*

Staff completed an RFP for engineering for the second phase of the SCIP. This includes design engineering budgeted in 2022/2023 and construction engineering for the construction phase of engineering in 2023/2024 and 2024/2025.

#### *Lead Service Line Replacement-Ongoing*

Staff continues to meet weekly with the lead service line replacement team to discuss lead service line identification, replacement, water sampling and planning.

#### *SRF ITA*

Staff continues to meet and assist in the loan application process under the SRF program. The project plan draft document is nearly complete. The SCIP (Strategic Capital Improvement Project) Phase II projects will be funded through this program.

#### *Clarifier Replacement Project-SCIP Phase II*

Staff will give a tour of Clarifier #2 and #3 including a slide presentation to the WSJOB. The phase two project includes architectural improvements in the 1974 addition to the plant.

### SDWA Annual Monitoring

Shawn completed the annual required monitoring which is outsourced to our contract laboratory. This sampling includes volatile organic compounds, partial chemistry (chloride, fluoride, hardness as CaCO<sub>3</sub>, iron, nitrate, nitrite sodium, sulfate), volatile organic compounds, arsenic and PFAS. All regulated contaminants were well below the maximum contaminant levels (MCL).

### Stage 2 Disinfectants and Disinfection Byproducts Rule Monitoring 2<sup>nd</sup> Quarter SWMRSS&WA

Staff collected second quarter compliance samples in April in the Authority at the two sites approved by EGLE. At DBP-1 (Lincoln Township Hall) the TTHM level was 43.4 ppb following a 36.3 ppb result in January. Compliance is computed on a running annual average basis. The current RAA at DBP-1 is 65.3 ppb which is down markedly from last fall. Characteristically, TTHM formation is lower in the winter. The DBP 2 sample taken at Dane Systems came in at 64.6 ppb which computed to an RAA of 64.4 ppb. The other Stage 2 contaminant HAA5 results were about one half of the limit coming in at 25.7 ppb and 29.5 ppb for DBP-1 and DBP-2 respectively.

### Travel & Training

Josh Bailey from our distribution staff completed the EGLE Limited Treatment Course. He will be taking his limited treatment D-4 examination in May. Limited Treatment includes disinfection only and applies primarily to ground water treatment plants and wells. The St. Joseph Water Plant is surface water plant equipped to add a coagulant and provide coagulation, sedimentation and filtration in addition to disinfection. The 'F' licenses are required of operators at the plant. The 'F' licenses also qualify operators to manage and operate 'D' systems. As such D examinations provide no value to our water plant operators. Nonetheless I hold a D-4 which I received in 1982 upon graduation from the Water Technology program at Bay College. Students were required to take the F-4, D-4 and S-4.

# Monthly Maintenance Notes

APRIL 2022

Normal PM Maint. done Monthly	Check all High Service and Low Service Pumps, BPS pumps, Service BPS Chlorinators, Change out air filters on VFD Drives and Air Handlers. Grounds work at Plant, Booster Stations and Water Towers
04/04/22	Flushed bleach feed lines to filters 5-8 and 9-12. Also replaced feed tubes on dosing pumps to same filters
04/05/22	Quarterly verification of all Filter Turbidimeters
04/11/22	Installed new wash wand nozzles in Filter # 8 and Skimmed mud balls out of the top of the filter.
4/11 to 4/21/22	Mead & White - Installed new conduit and wiring to new communication cabinet in upper foyer
04/26/22	Boelcke - Installed new thermostat in Lab for West HVAC unit.
04/27/22	Serviced "Z" mower, Oil and filter change, grease
04/27/22	Changed oil and air filters on Main Air Compressor # 1

**ST. JOSEPH WATER FILTRATION PLANT  
1701 LIONS PARK DRIVE  
SAINT JOSEPH, MI. 49085**

**By: Greg Alimenti  
St. Joseph Water Plant  
700 Broad St.  
Saint Joseph, MI. 49085-1276  
(269) 983-1240**

**APRIL 2022**

DISTRIBUTION:	
Total Gallons	81,200,791
Average Day	2,706,693
Maximum Day	2,922,812
Minimum Day	2,450,288

TREATMENT:	
Total Low Service	85,087,508
Wash Water Gals.	650,239
Wash Water %	0.74%
Plant Use Gals.	23,710
Plant Use %	0.03%

FILTRATION:		
Ave. Filter Run	281.0	hours
Ave. Filter Rate	1.66	g/sqft/min
Filter Eff. Index	791.0	
Ave. Loss of Head	0.8	feet
Plant Sewer Usage		

LABORATORY REPORT		
Average of	Raw	Tap
Chlorides mg/L	21.4	22.6
Fluoride mg/L	0.18	0.78
Alkalinity mg/L	120	108
Hardness mg/L	151	148
pH	8.1	7.4
Calcium mg/L	42	40
Magnesium mg/L	11	11
Turbidity NTU	0.57	0.04
Temperature °F	48	
Total Coliform		0.0
Chlorine Residual		
		mg/L Free
Mixing Basin		0.89
Applied		0.82
Tap		1.34
Distribution		1.18

TREATMENT CHEMICAL SUMMARY:					
	Applied mg/L	Total Lbs.	Cost	Inventory lbs.	Days Supply
		CHEMICAL			
Alum (Al <sup>+3</sup> )	22.89	16,230	\$5,293.43	29,928	27
Chlorine (Cl <sub>2</sub> )	2.47	1,753	\$2,892.55	4,884	84
Fluoride (F <sub>2</sub> )	0.60	428	\$749.36	15,368	205

		REMARKS:			
Total Cost all Chemicals	\$8,935.34				
Chemical Cost per Mil. Gallon Treated	\$105.01				
Chemical Cost per Mil. Gallon Delivered	\$106.09				
PLANT UTILITIES SUMMARY					
Electric:					
Total KWH	186,000	***includes measure of melted snow			
Total Power Cost	\$ 13,020.00	visit the City of Saint Joseph's Home page at <a href="http://www.sjcity.com">www.sjcity.com</a>			
Power Cost per Million Gallon Treated	\$ 153.02	e-mail comments to either: <a href="mailto:operator@sjcity.com">operator@sjcity.com</a> or <a href="mailto:galiment@sjcity.com">galimenti@sjcity.com</a>			
Power Cost per Million Gallon Delivered	\$ 179.39	WEATHER CONDITIONS AT THE PLANT		Air Temp. °F	
Gallons Pumped per KWH	195	SJWW Weather Computer		Avg.	46.4
		Rain Guage, Inches	3.33	Max.	85
		days it rained***		Min.	30.6
Natural Gas:		Wind Speed, Avg	9.5	Lake Temp. °F	
Metered Cubic Feet	6621	Wind Speed, Max	48	Avg.	48.4
Natural Gas Cost	\$4,523.20	Prevailing Wind Dir.	NA	Max	52.3
Emergency Power Diesel Fuel Inv., Gals.	North 1500	Lake Level (USACE)	579.86	Min	42.2
	South 500				

April

2022

SOUTHWEST MICHIGAN REGIONAL SANITARY SEWER & WATER AUTHORITY

WSSN 3726

CLEVELAND BOOSTER STATION

HILLTOP BOOSTER STATION

DATE	FLOW MGD	FEED GAL	CHL LBS/DAY	CHLORINE APPLIED mg/l	Cl <sub>2</sub> PRE mg/l	Cl <sub>2</sub> POST mg/l	Cl <sub>2</sub> MON mg/l	FLOW MGD	FEED GAL	CHL LBS/DAY	CHLORINE APPLIED mg/l	Cl <sub>2</sub> PRE mg/l	Cl <sub>2</sub> POST mg/l	Cl <sub>2</sub> MON mg/l	BOOSTER MGD		
1-Apr	1.879	233	33.03	2.11	1.04	1.15	1.11	0.000	0	0.00	0.00	0.89	1.62	1.63	1.879		
2-Apr	0.598	78	11.06	2.22				1.296	66	9.36	0.87				1.894		
3-Apr	0.598	78	11.06	2.22				1.296	66	9.36	0.87				1.894		
4-Apr	0.598	78	11.06	2.22	1.09	1.13	1.04	1.296	66	9.36	0.87	1.31	1.17	1.14	1.894		
5-Apr	1.694	217	30.77	2.18	1.06	1.18	0.99	0.001	0	0.00	0.00	0.86	1.07	1.00	1.694		
6-Apr	0.857	110	15.60	2.18				0.915	46	6.52	0.85				1.773		
7-Apr	0.857	110	15.60	2.18	1.27	1.31	1.07	0.915	46	6.52	0.85	0.95	1.28	1.04	1.773		
8-Apr	0.000	0	0.00	0.00	1.16	1.21	0.97	1.866	94	13.33	0.86	1.36	1.48	1.33	1.866		
9-Apr	1.186	160	22.68	2.29				0.630	37	5.25	1.00				1.817		
10-Apr	1.186	160	22.68	2.29				0.630	37	5.25	1.00				1.817		
11-Apr	1.186	160	22.68	2.29	1.45	1.25	1.22	0.630	37	5.25	1.00	1.50	1.32	1.31	1.817		
12-Apr	0.000	0	0.00	0.00	1.09	1.49	1.13	1.997	119	16.87	1.01	2.16	1.54	1.44	1.997		
13-Apr	1.913	269	38.14	2.39	2.10	1.43	1.30	0.000	0	0.00	0.00	1.96	1.68	1.84	1.913		
14-Apr	0.000	0	0.00	0.00	1.39	1.28	1.20	1.860	98	13.89	0.90	1.53	1.33	1.37	1.860		
15-Apr	0.954	126	17.86	2.25				1.003	57	8.08	0.97				1.957		
16-Apr	0.954	126	17.86	2.25				1.003	57	8.08	0.97				1.957		
17-Apr	0.954	126	17.86	2.25				1.003	57	8.08	0.97				1.957		
18-Apr	0.954	126	17.86	2.25	1.13	1.34	1.21	1.003	57	8.08	0.97	1.41	1.44	1.46	1.957		
19-Apr	1.841	226	32.04	2.09	1.57	1.23	1.23	0.006	0	0.00	0.00	1.53	1.41	1.47	1.847		
20-Apr	0.000	0	0.00	0.00	1.13	1.31	1.15	1.938	110	15.60	0.96	1.61	1.32	1.41	1.938		
21-Apr	1.802	231	32.75	2.18	1.32	1.29	1.21	0.011	0	0.00	0.00	1.41	1.62	1.57	1.814		
22-Apr	0.002	0	0.00	0.00	1.26	1.17	1.12	1.978	106	15.03	0.91	1.11	1.15	1.17	1.979		
23-Apr	1.214	169	23.96	2.37				0.706	40	5.67	0.96				1.920		
24-Apr	1.214	169	23.96	2.37				0.706	40	5.67	0.96				1.920		
25-Apr	1.214	169	23.96	2.37	1.54	1.79	1.33	0.706	40	5.67	0.96	1.52	1.53	1.63	1.920		
26-Apr	0.005	0	0.00	0.00	1.07	1.32	1.17	1.964	125	17.72	1.08	1.23	1.47	1.36	1.969		
27-Apr	1.759	248	35.16	2.40	1.31	1.01	1.16	0.010	0	0.00	0.00	1.66	2.07	1.81	1.769		
28-Apr	0.000	0	0.00	0.00	0.93	1.20	1.08	1.963	127	18.01	1.10	1.14	1.21	1.22	1.963		
29-Apr	1.807	235	33.32	2.21	1.22	1.29	1.22	0.003	0	0.00	0.00	1.33	1.17	1.13	1.810		
30-Apr	0.632	83	11.77	2.23				1.318	70	9.92	0.90				1.950		
TOTAL	27.859	3,687	522.7					28.653	1,598	226.56					56.512		
AVE DAY	0.929		17.4	1.73	1.3	1.3	1.2	0.9551		7.6	0.73	1.39	1.41	1.39	1.884		
MAX	1.913		38.1	2.40	2.1	1.8	1.3	1.9966		18.0	1.10	2.16	2.07	1.84	1.997		
MIN	0.000		0.0	0.00	0.9	1.0	1.0	0.0000		0.0	0.00	0.86	1.07	1	1.694		
MONTHLY TOTALS:	Cleveland Total MG				SJCT EAST				Hilltop Total MG				Cleveland Pump Station:				
Average Day	1.823	Chl Add	27.852	Average Day				0.159	Chl Add				28.623	Hilltop Pump Station:			
Max Day (Est)	2.166	No Chl Add	0.007	Max Day (Est)				0.169	No Chl Add				0.031	TOTAL AUTHORITY (Trted.)			
Total Authority Flow:	56.512					Month Total				4.782							

# DISTRIBUTION REPORT

For the Month of April 2022

Activity	Number/Description
Water Main Breaks	0
MISS DIGS	413
Delinquent Shut Off	0
Hydrants (Repaired/Replaced)	2 1961 Lasein (LCT) Replace (could not repair), Rocky Weed/Anna Court (LCT) leaking
Valve Turning	8
Valves	2 Replaced broken valve on Lasein & Knox. Kimmel & George (LCT), located valve Ridge & Red Arrow (LCT)
Taps (1")	2 3555 Therese Path (SJT) New build in old subdivision 1718 Matthew Court (RCT) Well conversion
Cross Connection Control	0
Service Retirement	
Service Replacement (Lead)	391 Ridgeway (SJ), Replace service, private side damaged by City. Lead
Service Repair	0
Repair of Curb box/Shut-Off Valves	8 Various; froze up, bent curb box, rod broken, adjust.
Replace Curb box	
Meter pit/service replacement	0
Water Quality complaints	12 Water quality/pressure, color
Hydrant flushing to maintain water quality	0
Service line complaints (customer side)	6 leaks, high water use, misreported stormwater, snowbirds, low pressure
Private Service break	0
Staff Education/Training	24 Josh Bailey-Limited Treatment, general staff CDL
Overtime-Total	62.3
Turn Off	Defective meter
Turn On	Sensors bad
Finals	Downsize meter
<b>Meter Repair/Replacement</b>	TRT missing
Meter Repair	Audit Meter
Per detail	Verify Read
Meter leaking	Move Mxu Box
Stopped Meter	New Installation
Faulty Register	
Frozen Meter	Replaced/various reasons (e.g.,downsize, defective)
Move Meter Inside	Rockwell Replacement
Hard to read	Mxu Replaced
Replace/Adding Sprinkler Meter	Sprinkler meter removed/line capped
Damage to Meter/TRT/wire damaged	Removals/demo
New Plumbing	Curb box location
New siding	Broken Remote
Lead services	Noisy Meter
	Upgrade 5/8" to 3/4" (upgrade to 1")

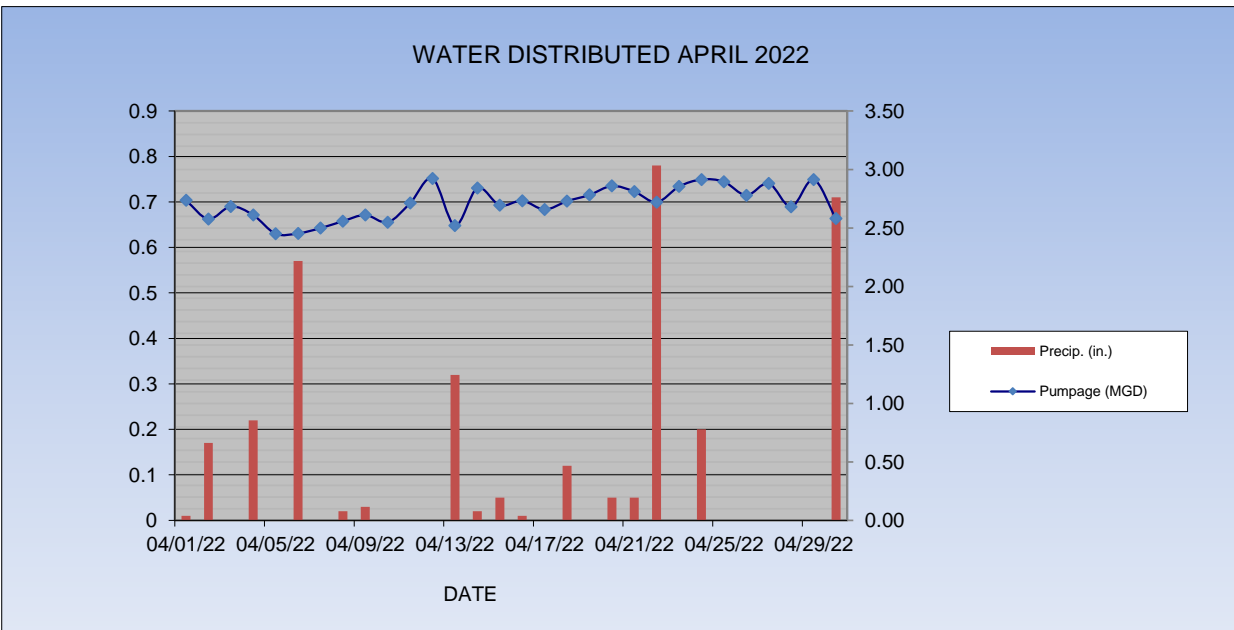
## CITY OF ST. JOSEPH WATER MAIN BREAK REPORT- April 2022

Date	Location	Main Size	Gallons Lost	Break Type	Valves Turned	City Twp	Labor	Remarks
	No breaks in April							
TOTALS			-				0	

**ST JOSEPH WATER PLANT PUMPAGE-WATER DELIVERED/RAINFALL  
APRIL 2022**

DATE	PUMPAGE (gallons)	PUMPAGE (MGD)	Rainfall (in)	Day to Day Comparison 2022/2021	
				2022	2021
04/01/22	2,735,189	2.74	0.01	2,735,189	2,879,186
04/02/22	2,575,924	2.58	0.17	2,575,924	2,817,374
04/03/22	2,683,843	2.68	0	2,683,843	2,846,172
04/04/22	2,609,682	2.61	0.22	2,609,682	2,873,914
04/05/22	2,450,288	2.45	0	2,450,288	2,880,772
04/06/22	2,453,360	2.45	0.57	2,453,360	3,013,594
04/07/22	2,498,206	2.50	0	2,498,206	2,957,695
04/08/22	2,557,845	2.56	0.02	2,557,845	2,766,023
04/09/22	2,610,495	2.61	0.03	2,610,495	2,987,951
04/10/22	2,548,879	2.55	0	2,548,879	2,752,059
04/11/22	2,712,303	2.71	0	2,712,303	2,884,512
04/12/22	2,922,812	2.92	0	2,922,812	2,877,531
04/13/22	2,521,004	2.52	0.32	2,521,004	3,109,639
04/14/22	2,841,105	2.84	0.02	2,841,105	3,174,276
04/15/22	2,693,561	2.69	0.05	2,693,561	2,936,163
04/16/22	2,732,662	2.73	0.01	2,732,662	3,120,248
04/17/22	2,657,680	2.66	0	2,657,680	2,985,060
04/18/22	2,728,929	2.73	0.12	2,728,929	3,086,349
04/19/22	2,781,801	2.78	0	2,781,801	3,095,330
04/20/22	2,858,450	2.86	0.05	2,858,450	3,050,113
04/21/22	2,811,452	2.81	0.05	2,811,452	2,939,809
04/22/22	2,720,025	2.72	0.78	2,720,025	2,874,820
04/23/22	2,853,818	2.85	0	2,853,818	3,169,912
04/24/22	2,913,973	2.91	0.2	2,913,973	3,006,304
04/25/22	2,894,717	2.89	0	2,894,717	2,839,774
04/26/22	2,779,076	2.78	0	2,779,076	3,377,211
04/27/22	2,881,264	2.88	0	2,881,264	3,517,011
04/28/22	2,680,175	2.68	0	2,680,175	3,141,489
04/29/22	2,912,769	2.91	0	2,912,769	2,980,220
04/30/22	2,579,505	2.58	0.71	2,579,505	3,256,252
<b>TOTAL</b>	<b>81,200,791</b>	<b>81.20</b>	<b>3.33</b>	<b>81,200,791</b>	<b>90,196,764</b>

<b>Average Day</b>	<b>2,706,693</b>
<b>Maximum Day</b>	<b>2,922,812</b>
<b>Minimum Day</b>	<b>2,450,288</b>



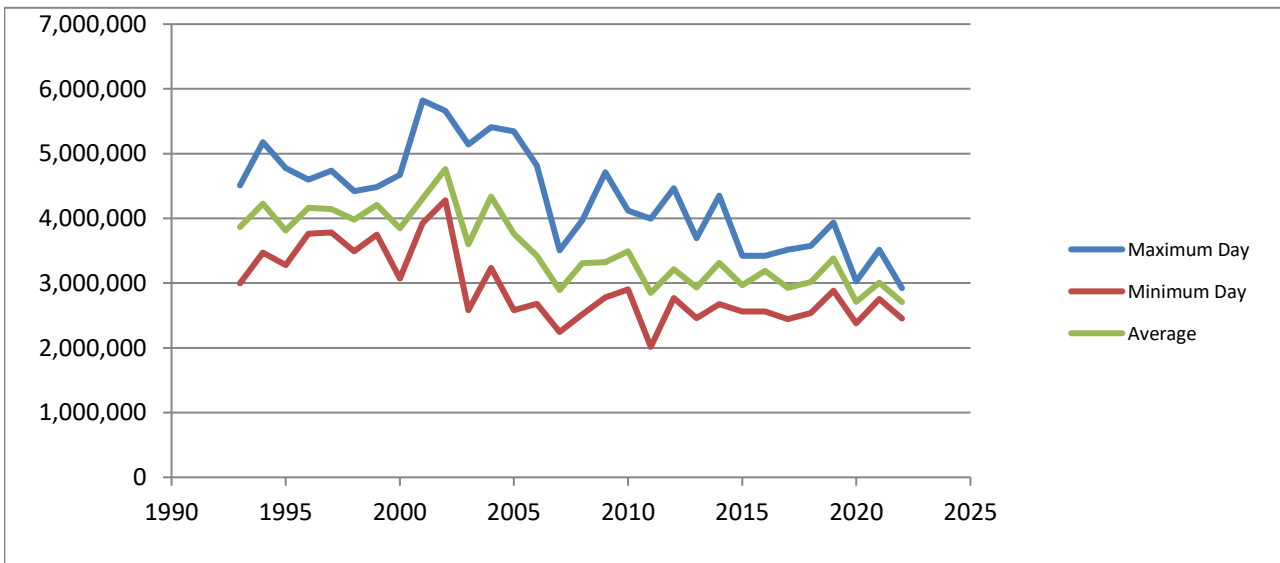


# ST JOSEPH WATER PLANT PUMPAGE-WATER DELIVERED

APRIL 2022

Year	Average	Maximum Day	Minimum Day	Monthly Total
1993	3,867,257	4,510,000	2,995,700	116,017,700
1994	4,226,717	5,175,600	3,468,700	126,801,500
1995	3,813,150	4,775,300	3,278,300	114,394,500
1996	4,160,767	4,600,100	3,760,250	124,823,000
1997	4,143,047	4,737,000	3,782,950	124,291,400
1998	3,982,177	4,422,050	3,492,300	119,465,300
1999	4,208,870	4,483,600	3,749,750	126,266,100
2000	3,846,682	4,673,250	3,070,300	115,400,450
2001	4,308,365	5,820,850	3,927,950	129,250,950
2002	4,760,498	5,661,000	4,278,600	142,814,950
2003	3,598,427	5,143,250	2,580,250	107,952,820
2004	4,336,191	5,410,250	3,232,750	130,085,740
2005	3,761,613	5,342,000	2,579,750	112,848,390
2006	3,421,883	4,813,020	2,680,500	102,656,500
2007	2,894,947	3,508,000	2,244,000	86,848,410
2008	3,306,528	3,968,250	2,514,750	99,195,850
2009	3,321,686	4,712,250	2,777,150	99,650,580
2010	3,490,279	4,120,407	2,901,472	104,708,365
2011	2,849,967	3,996,000	2,015,000	85,499,000
2012	3,212,837	4,463,210	2,767,357	96,385,121
2013	2,934,656	3,695,486	2,458,231	88,039,671
2014	3,311,996	4,349,621	2,672,815	99,359,878
2015	2,969,177	3,422,810	2,560,707	86,504,069
2016	3,190,977	3,422,810	2,560,707	95,729,302
2017	2,924,947	3,514,753	2,442,973	87,748,418
2018	3,018,028	3,574,038	2,535,462	90,540,829
2019	3,384,434	3,936,708	2,880,804	101,533,031
2020	2,709,173	3,026,051	2,376,954	81,275,185
2021	3,006,559	3,517,011	2,752,059	90,196,764
2022	2,706,693	2,922,812	2,450,288	81,200,791

Rank	Year	Monthly Total
1	2002	142,814,950
2	2004	130,085,740
3	2001	129,250,950
4	1994	126,801,500
5	1999	126,266,100
6	1996	124,823,000
7	1997	124,291,400
8	1998	119,465,300
9	1993	116,017,700
10	2000	115,400,450
11	1995	114,394,500
12	2005	112,848,390
13	2003	107,952,820
14	2010	104,708,365
15	2006	102,656,500
16	2019	101,533,031
17	2009	99,650,580
18	2014	99,359,878
19	2008	99,195,850
20	2012	96,385,121
21	2016	95,729,302
22	2018	90,540,829
23	2021	90,196,764
24	2013	88,039,671
25	2017	87,748,418
26	2007	86,848,410
27	2015	86,504,069
28	2011	85,499,000
29	2020	81,275,185
30	2022	81,200,791



	TOC Compliance								
	Treated	Source	Formula		Req. TOC	Actual	Alternative	Compl. Perf.	
	Tap	Tap	Ratio	Alka- linity	Removal	Ratio/ Remov	Criteria Complied Y/N		Ratio/Removal
April	1.59	2.14	25.7	112	25	1.03	N(Removal)	1.03	4/12/2021
May	1.54	1.90	18.9	115	25	0.76	Yes	1.00	5/13/2021
June	1.51	1.86	18.8	111	25	0.75	Yes	1.00	6/15/2021
						<b>0.85</b>			
July	1.61	1.98	18.7	111	25	0.75	Yes	1.00	7/12/2021
August	1.47	1.92	23.4	112	25	0.94	Yes	1.00	8/18/2021
September	1.60	1.90	15.8	112	25	0.63	Yes	1.00	9/9/2021
						<b>0.77</b>	Yes	1.00	
October	1.75	2.61	33.0	122	15	2.20	N(Removal)	2.20	10/24/2021
November	1.49	1.85	19.5	121	15	1.30	N(Removal)	1.30	11/9/2021
December	2.72	2.98	8.7	130	15	0.58	Yes	1.00	12/15/2021
						<b>1.36</b>			
January	1.60	1.95	17.9	118	25	0.72	Yes	1.00	1/12/2022
February	1.49	1.89	21.2	133	15	1.41	N(Removal)	1.41	2/17/2022
March	1.75	1.93	9.3	119	25	0.37	Yes	1.00	3/8/2022
						<b>0.83</b>	Yes	1.00	
April	1.77	2.04	13.2	102	25	0.53	Yes	1.00	4/13/2022
Qtr Average							Yes		
Annual Avg.	1.68	2.07				0.95		1.13	

STAGE 2 D/DBPR MONITORING-TTHM

APRIL 2022

**WSSN 3726**

Date	07/12/21	07/12/21
Site	Lincoln Twp Hall (DBP-1)	JR Automation (DBP-2)
Bromodichloromethane	16	13
Bromoform	0.6	<0.5
Chloroform	73	46
Dibromochloromethane	6.8	5.2
<i>Total Trihalomethanes</i>	96.4	64.2

Date	10/29/21	10/29/21
Site	Lincoln Twp Hall (DBP-1)	JR Automation (DBP-2)
Bromodichloromethane	18	17
Bromoform	<.5	<0.5
Chloroform	62	58
Dibromochloromethane	4.9	5.1
<i>Total Trihalomethanes</i>	84.9	80.1

Date	01/20/22	01/20/22
Site	Lincoln Twp Hall (DBP-1)	JR Automation (DBP-2)
Bromodichloromethane	10	12
Bromoform	<.5	<0.5
Chloroform	23	32
Dibromochloromethane	3.3	4.8
<i>Total Trihalomethanes</i>	36.3	48.8

Date	04/14/22	04/14/22
Site	Lincoln Twp Hall (DBP-1)	JR Automation (DBP-2)
Bromodichloromethane	11	13
Bromoform	<.5	<0.5
Chloroform	29	48
Dibromochloromethane	3.4	3.6
<i>Total Trihalomethanes</i>	43.4	64.6

	Lincoln Twp Hall (DBP-1)	Dane (DBP-2)
<b>RAA (ppb)</b>	<b>65.3</b>	<b>64.4</b>

STAGE 2 D/DBPR MONITORING-HALOACETIC ACIDS

APRIL 2022

WSSN 3726

Date	07/12/21	07/12/21
Site	Lincoln Twp Hall (DBP-1)	JR Automation (DBP-2)
Dibromoacetic acid	<1	<1
Dichloroacetic acid	15	15
Monobromoacetic acid	<1	<1
Monochloroacetic acid	<2	<2
Trichloroacetic acid	11	13
<i>Total HAA5</i>	<i>16.1</i>	<i>28.0</i>

Date	10/29/21	10/29/21
Site	Lincoln Twp Hall (DBP-1)	JR Automation (DBP-2)
Dibromoacetic acid	5.3	5.1
Dichloroacetic acid	6.4	5.3
Monobromoacetic acid	<1	<1
Monochloroacetic acid	<2	<2
Trichloroacetic acid	20	19
<i>Total HAA5</i>	<i>31.7</i>	<i>29.4</i>

Date	01/20/22	01/20/22
Site	Lincoln Twp Hall (DBP-1)	JR Automation (DBP-2)
Dibromoacetic acid	<1.0	<1.0
Dichloroacetic acid	12	7.5
Monobromoacetic acid	<1	<1
Monochloroacetic acid	<2	<2
Trichloroacetic acid	15	11
<i>Total HAA5</i>	<i>27</i>	<i>18.5</i>

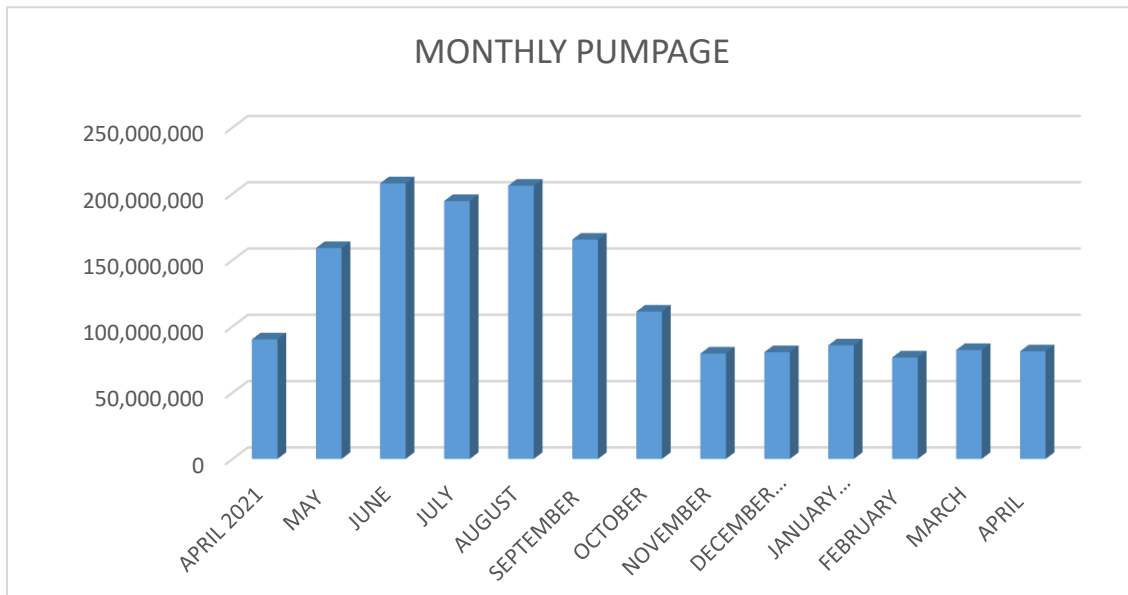
Date	04/14/22	04/14/22
Site	Lincoln Twp Hall (DBP-1)	JR Automation (DBP-2)
Dibromoacetic acid	<1.0	<1.0
Dichloroacetic acid	13	20
Monobromoacetic acid	<1	<1
Monochloroacetic acid	<2	<2
Trichloroacetic acid	15	22
<i>Total HAA5</i>	<i>28</i>	<i>42.0</i>

	Lincoln Twp Hall (DBP-1)	Dane (DBP-2)
<b>RAA (ppb)</b>	<b>25.7</b>	<b>29.5</b>

# ST. JOSEPH WATER PLANT-YEAR TO DATE PUMPAGE

APRIL 2022

	Pumpage Month	Pumpage FISCAL YTD	By Quarter
APRIL 2021	90,196,764	90,196,764	
MAY	159,086,815	249,283,579	
JUNE	207,863,490	457,147,069	457,147,069
JULY	194,516,481	194,516,481	
AUGUST	206,106,524	400,623,005	
SEPTEMBER	165,413,457	566,036,462	566,036,462
OCTOBER	111,150,956	677,187,418	
NOVEMBER	79,512,900	756,700,318	
DECEMBER 2021	80,497,727	837,198,045	271,161,583
JANUARY 2022	85,696,372	922,894,416	
FEBRUARY	76,518,702	999,413,119	
MARCH	82,154,723	1,081,567,842	244,369,797
APRIL	81,200,791	1,162,768,632	
TOTAL	1,538,714,910		



**MONTHLY CLIMATOLOGICAL SUMMARY**

**April**

**2022**

**NAME: sjwwweather**

**St. Joseph Water Plant - 1701 Lions Park Drive - St. Joseph, MI**

DAY	MEAN TEMP	NORM MEAN TEMP	HIGH TEMP	TIME	NORM HIGH TEMP	REC HIGH TEMP	YEAR	LOW TEMP	TIME	NORM LOW TEMP	REC LOW TEMP	YEAR	HEAT DEG DAYS	COOL DEG DAYS	RAIN	AVG WIND SPEED	HIGH	TIME	DOM DIR
1	34.7	43	<b>39.5</b>	5:30p	53	83	1986	<b>32.3</b>	10:30p	33	17	1984	30.3	0	<b>0.01</b>	<b>10.7</b>	<b>32</b>	9:30a	
2	36.3	44	<b>44.9</b>	2:00p	53	79	1963	<b>30.6</b>	7:30a	33	20	1992	28.7	0	<b>0.17</b>	<b>6</b>	<b>23</b>	10:00p	
3	40	44	<b>50.5</b>	3:00p	54	80	1956	<b>36.3</b>	12:30a	33	18	1954	25	0	<b>0</b>	<b>6.5</b>	<b>17</b>	2:00a	
4	43.3	45	<b>52.7</b>	12:30p	54	75	1956	<b>40.5</b>	12:30a	34	15	1993	21.7	0	<b>0.22</b>	<b>5.6</b>	<b>19</b>	3:00p	
5	48.7	45	<b>58.9</b>	6:00p	55	82	1988	<b>39.2</b>	3:00a	34	18	1982	16.3	0	<b>0</b>	<b>2.9</b>	<b>15</b>	12:30p	
6	48.5	45	<b>54.3</b>	3:30a	55	82	1988	<b>42.9</b>	12:00m	34	14	1982	16.5	0	<b>0.57</b>	<b>9.9</b>	<b>27</b>	12:00m	
7	41.9	46	<b>43.4</b>	1:00a	55	79	2021	<b>41.2</b>	2:30p	35	9	1982	23.1	0	<b>0</b>	<b>16.3</b>	<b>35</b>	5:00a	
8	38.6	46	<b>41.6</b>	12:30a	56	77	1991	<b>34.7</b>	12:00m	35	15	1972	26.4	0	<b>0.02</b>	<b>13</b>	<b>25</b>	6:00p	
9	36.5	46	<b>40.8</b>	6:00p	56	76	2017	<b>33.4</b>	8:30a	35	15	1985	28.5	0	<b>0.03</b>	<b>9.9</b>	<b>26</b>	9:30a	
10	49.5	47	<b>63</b>	4:30p	57	80	1977	<b>34.3</b>	7:30a	36	15	1997	15.5	0	<b>0</b>	<b>6.2</b>	<b>30</b>	8:30p	
11	51.4	47	<b>60.1</b>	6:30a	57	79	1977	<b>46</b>	11:30p	36	18	1952	13.6	0	<b>0</b>	<b>7</b>	<b>25</b>	12:30a	
12	58	47	<b>72.1</b>	4:30p	57	82	1971	<b>41.8</b>	7:00a	36	21	1982	8.6	1.5	<b>0</b>	<b>5.6</b>	<b>28</b>	10:00p	
13	63.3	48	<b>68.8</b>	3:30a	58	77	1960	<b>43.5</b>	12:00m	36	18	1950	2.8	1.1	<b>0.32</b>	<b>10.2</b>	<b>34</b>	12:00m	
14	43.3	48	<b>47</b>	5:30p	58	79	1976	<b>39.3</b>	7:00a	37	21	1982	21.7	0	<b>0.02</b>	<b>20</b>	<b>36</b>	12:30p	
15	44.7	48	<b>49.5</b>	5:30p	59	83	1976	<b>42.2</b>	12:00m	37	16	1957	20.3	0	<b>0.05</b>	<b>15.8</b>	<b>48</b>	5:30p	
16	38.2	49	<b>42.3</b>	12:30a	59	86	1976	<b>35.3</b>	10:00p	37	24	1990	26.8	0	<b>0.01</b>	<b>12.5</b>	<b>24</b>	3:30a	
17	37.2	49	<b>41.2</b>	12:30p	59	84	1976	<b>31.6</b>	7:30a	38	25	1949	27.8	0	<b>0</b>	<b>8.3</b>	<b>23</b>	6:30p	
18	36.9	49	<b>41.5</b>	12:30a	60	86	2002	<b>33.1</b>	8:00a	38	19	1990	28.1	0	<b>0.12</b>	<b>10.2</b>	<b>41</b>	8:30p	
19	39.7	50	<b>44.9</b>	4:30p	60	84	1985	<b>36.9</b>	12:30a	38	18	1988	25.3	0	<b>0</b>	<b>13.3</b>	<b>34</b>	3:00a	
20	45.1	50	<b>54</b>	12:00m	60	84	1985	<b>36.3</b>	2:30a	39	22	1951	19.9	0	<b>0.05</b>	<b>5.5</b>	<b>25</b>	3:00p	
21	51.5	50	<b>58.8</b>	7:30p	61	86	1985	<b>45</b>	8:30a	39	23	1953	13.5	0	<b>0.05</b>	<b>9.3</b>	<b>33</b>	3:00a	
22	48.9	51	<b>53.3</b>	2:00p	61	86	1985	<b>46.1</b>	5:00a	39	21	1993	16.1	0	<b>0.78</b>	<b>3.9</b>	<b>22</b>	9:00p	
23	66.7	51	<b>85</b>	6:30p	62	85	1980	<b>48.7</b>	5:00a	39	18	1986	5.7	7.4	<b>0</b>	<b>8.8</b>	<b>26</b>	1:30a	
24	67.2	51	<b>74.5</b>	1:30a	62	85	1990	<b>51.8</b>	12:00m	40	28	1999	1.6	3.8	<b>0.2</b>	<b>13.3</b>	<b>34</b>	7:30a	
25	47.8	52	<b>51.8</b>	12:30a	62	86	1990	<b>42.9</b>	11:30p	40	25	1949	17.2	0	<b>0</b>	<b>8.3</b>	<b>24</b>	9:30p	
26	41.1	52	<b>44.2</b>	3:00p	63	88	1986	<b>38.2</b>	11:30p	40	24	1997	23.9	0	<b>0</b>	<b>16.2</b>	<b>28</b>	1:30p	
27	36.5	52	<b>38.7</b>	12:30a	63	87	1994	<b>34.1</b>	11:30a	41	27	1988	28.5	0	<b>0</b>	<b>14.6</b>	<b>29</b>	8:00a	
28	44.7	53	<b>51.8</b>	7:00p	64	85	1990	<b>37.8</b>	12:30a	41	24	1992	20.3	0	<b>0</b>	<b>3.3</b>	<b>18</b>	3:30p	
29	55.2	53	<b>65.6</b>	3:30p	64	82	1970	<b>45</b>	5:30a	41	27	1979	9.8	0	<b>0</b>	<b>5.3</b>	<b>22</b>	2:00p	
30	57.5	53	<b>66.3</b>	6:00p	64	87	1962	<b>50.2</b>	7:30a	42	30	1971	7.5	0	<b>0.71</b>	<b>6</b>	<b>31</b>	11:30p	
31																			
AVE	<b>46.4</b>	<b>48.5</b>											<b>19.0</b>	<b>0.5</b>	<b>0.1</b>	<b>9.5</b>	<b>27.8</b>		
MAX	<b>67.2</b>	<b>53</b>	<b>85</b>			<b>88</b>		<b>51.8</b>		<b>42</b>	<b>30</b>		<b>30.3</b>	<b>7.4</b>	<b>0.78</b>	<b>20.0</b>	<b>48.0</b>		
MIN	34.7	43	38.7					30.6		33	9		1.6	0	0	2.9	15		
TOTAL															<b>3.33</b>				

Max Rain: 0.78 ON 04/22/22  
 Days of Rain: 14 (>.01 in) 8 (>.1 in) 0 (>1 in)