

CITY OF ST. JOSEPH WATER FILTRATION PLANT
OPERATIONAL REPORT
JANUARY 2016



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 REPORT-JANUARY 2016

Water demand in January was down by 443,444 gallons or 0.50% from last year. This reverses an upward trend that began in August and continued through most of November and mirrors a one half percent drop in the December pumpage. This year 89,424,242 gallons were delivered which compares to 89,867,686 gallons delivered January of 2015. The January 2016 pumpage ranked 28th in the thirty year tabulation dating back to 1987.

GENERAL ACTIVITIES

Phase 1 SCIP

Staff is working on an RFP for the filter study which was identified in the Strategic Capital Improvement Plan (SCIP). The filter study will address hydraulic limitations in the filter piping and assess the feasibility of rerating filters 5-12. In addition a new DWRP project plan will have to be done for the SCIP. The last project plan was completed in 2007 and included the intake, E&P improvements and clarifier upgrades. The DWRP project plan will include the City of St. Joseph distribution system and be submitted in late 2016 upon completion of the filter study. Staff attended an infrastructure financing seminar in Lansing on February 2nd to learn of recent changes in the DWRP program.

The Stage 2 Disinfectants and Disinfection Byproducts Rule (DBPR) Authority Monitoring-January 2016

The Stage 2 Disinfectants and Disinfection Byproducts Rule (DBPR) reduces drinking water exposure to disinfection byproducts. The Rule applies to community water systems and non-transient non-community systems, including those serving fewer than 10,000 people that add a disinfectant to the drinking water during any part of the treatment process. The Stage 2 DBPR strengthens public health protection by tightening compliance monitoring requirements for Trihalomethanes (TTHM) and Haloacetic acids (HAA5). The rule targets public water systems (PWSs) with the greatest risk. Taken together, the Stage 1 and Stage 2 Disinfectants and Disinfection Byproducts Rules (DBPRs) improve drinking water quality. The rules do this by providing protection from disinfection byproducts. Byproducts, if consumed in excess of EPA's standard over many years, may increase health risks. Pathogens, such as *Giardia*, *Cryptosporidium*, and viruses, are often found in source water and can cause gastrointestinal illness. Illnesses include diarrhea, vomiting, cramps and other health risks. In many cases, water needs to be disinfected to inactivate (or kill) these microbial pathogens. However, disinfectants can react with naturally-occurring materials in the water to form byproducts including Trihalomethanes (TTHM), and Haloacetic acids (HAA). The City of St. Joseph and Authority remain in full compliance with the D/DPR. The January 2016 results for the Authority are tabulated in the attached report which was submitted to MDEQ.

Applied Water Continuous On Line Chlorine Monitoring Capability

Staff is working with ABCS and West Michigan Instrumentation to install chlorine monitors in the clarifiers to measure applied water chlorine residual. This will enable operators to respond more effectively to changing raw water conditions which are manifested in the clarifiers. This is vital since the shift in chlorine feed from almost all of the dose in the wet well a 50/50 mix wet well/clarifier effluent (applied water). As has been reported earlier the shift in chlorine feed is being done to reduce the formation of disinfection byproducts and hence improve finished water quality. In January 2016 water plant staff met with representatives from Swan and solicited quotes from Hach Corporation. The WTP and booster pump stations are currently equipped with Hach.

TOC Data Logging

Concurrent with the installation of continuous on line chlorine monitoring capability staff is working on interfacing the on-line TOC analyzer with the process computer. This will enable the logging and trending of data which is currently being recorded by hand and transferred to paper reports.

Water Plant Operator Position

As reported last month, Ryan Patzer returned to Public Works after successfully completing his training shift. The position was immediately posted internally and Kevin Kelly from Public Works bid and was accepted after an interview with plant staff and consultation with his past supervisors in the city. He is excited to be working at the plant and is doing well in training.

A provisional water plant operator's license has been applied for. After completing training wherein he will operate side by side with staff operators he will be permitted to operator on the provisional license for a period of one year. In the interim he will have two opportunities (May and November) to take the MDEQ certification examination. Upon passing the examination he will be a fully certified water plant operator at the F-4 level.

Travel & Training

Staff attended the Infrastructure Financing Seminar in Lansing on February 2nd. Staff also attended the MWEA/Michigan Section AWWA Expo at the Lansing Center on that date.

Fairplain Interconnects

The Fairplain interconnect project has been postponed until Spring 2016.

Monthly Maintenance Notes

January 2016

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. Snow Removal at Plant, Booster Stations and Water Towers
1/4 to 1/8/16	Painting header pipes at Cleveland BPS
01/05/16	Repaired Check Valve for #2 Reclaim Pump
01/06/16	Installed new moveable scraper blade on Clarifier # 2
01/07/16	Hach - Service and Calibration on TOC Analyzer
01/08/16	Changed Oil and installed new drive belt on Stober Drive (TD-57) for rotor on Clarifier # 2
01/11/16	Repaired Hot Air Sterilizer in Lab
01/14/16	Repaired Check Valve for Reclaim Pump # 2
01/15/16	Installed New Turnbuckle assemblies for the Moveable Wing Arm and replaced chain for counterweight with Stainless Cable. Also installed new oiler brackets for roller wheels on Clarifier # 2
01/19/16	Installed New Heater Coil in still
01/21/16	Installed new oilers on clarifier # 2, (2 for the rollers and 1 for the gear drive)
01/22/16	Filled Clarifier # 2 & put in service
01/22/16	Installed new automatic blow off valve on air compressor tank
1/26 to 1/28/16	Finished painting header pipes at Cleveland BPS
01/29/16	Changed oil in vacuum primer pumps # 1 & # 2
01/29/16	Changed oil and air filters on Air Compressor # 1

DISTRIBUTION REPORT

For the Month of January 2016

Activity	Number/Description		
Water Main Breaks	7		
MISS DIGS	100		
Delinquent Shut Off	15	LCT	
Delinquent Shut Off (Broken Payment Plans)	0		
Hydrants (Repaired/Replaced)	0		
Valves	0		
Taps (1")	0		
Cross Connection Control (Hydro Designs)			
Service Work (System Valves)			
Repair of Curb box/Shut-Off Valves	2	2161 Ann Dr, 4690 Washington (SJCT) (leaking, shut off br)	
Service Repair	1	1456 Main St. (leaky service)	
Service Replacement	0		
Water Quality Complaint(s)	0		
Hydrant Flushing to maintain water quality	0		
Hydrant Flushing (Stage 2 Rule)			
Service line complaints (customer side)	2		
Staff Education/Training	0		
Overtime-Total	205	(Including Sanitary and Storm)	
Turn Off	8	(Note: For delinquent Shut off see above)	
Turn On	4		
Finals	71		
Meter Repair/Replacement			
		Audit Meter	
		Verify Read	
Meter Repair		Move Mxu Box	
Per detail		New Installation	2
Meter leaking	3	New Installation-Benton Harbor	
Stopped Meter	8	Replaced/various reasons (1 downsize, 1 defective)	1
Faulty Register		Rockwell Replacement	
Frozen Meter	4	Mxu Replaced	1
Move Meter Inside		Sprinkler meter removed/line capped	
Hard to read	8	Removals/demo	
Replace/Adding Sprinkler Meter		Curb box location	1
Damage to Trt		Broken Remote	
New Plumbing		Noisy Meter	
New siding		Upgrade 5/8" to 3/4" (upgrade to 1")	
Meter sent out for testing		Meter Change/Benton Harbor	

CITY OF ST. JOSEPH WATER MAIN BREAK REPORT									
For the Month/Year of: January 2016									
#	Date	Location	Main Size	Gallons Lost	Break Type	Valves Turned	City Twp	Labor	Remarks
1	1/3/2016	741 Clemens Ave	6		Circumferential	3	SJCT	15.0	Sandy soil, 5 ft cover, circumferential, No cathodic
2	1/7/2016	722 Tucker	6	12,000	Circumferential	3	SJCT	20.0	Sandy soil, 5 ft. cover, circ crack 1/8" entire, No cathodic
3	1/17/2016	5572 Fairview Ave	4	11,000	Circumferential	2	LCT		LCT (Stevensville), loamy sand cover, No cathodic
4	1/24/2016	Lakeshore Dr & Lake Blvd	12	1,200	Circumferential	9	CITY	60.0	Small crack bottom of pipe, clay sandy, 6 ft, No cathodic
5	1/25/2016	5586 Ridge Road	6	18,000	Circumferential	4	LCT	25.0	1/4" crack entire circumference, sandy, 5.5 ft, No cathodic
6	1/26/2016	Napier & Pixley	6	2,500	Circumferential	3	CITY	30.0	2 circ breaks in one hole, blue clay, 5 ft, Cathodic
7	1/26/2016	520 Petrie	6	4,000	Circumferential	2	CITY	20.0	1/16"-1/8" circ crack entire pipe, 6 ft, Cathodic, clay soils
TOTALS				48,700				170.0	

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

January 2016

DISTRIBUTION:	
Total Gallons	89,424,242
Average Day	2,884,653
Maximum Day	3,443,767
Minimum Day	2,455,434

TREATMENT:	
Total Low Service	92,279,217
Wash Water Gals.	1,126,426
Wash Water %	1.21%
Plant Use Gals.	1,731,291
Plant Use %	1.88%

FILTRATION:		
Ave. Filter Run	68.1	hours
Ave. Filter Rate	1.88	g/sqft/min
Filter Eff. Index	339.6	
Ave. Loss of Head	1.1	feet
Plant Sewer Usage		

LABORATORY REPORT		
Average of	Raw	Tap
Chlorides mg/L	16.9	17.6
Fluoride mg/L	0.13	0.70
Alkalinity mg/L	123	106
Hardness mg/L	147	146
pH	8.1	7.4
Calcium mg/L	42	42
Magnesium mg/L	10	10
Turbidity NTU	1.66	0.04
Temperature °F	37	
Total Coliform		0.0
Chlorine Residual		
		mg/L Free
Mixing Basin		0.89
Applied		1.53
Tap		1.59
Distribution		1.16

TREATMENT CHEMICAL SUMMARY:					
	Applied mg/L	Total Lbs.	Cost	Inventory lbs.	Days Supply
		CHEMICAL			
Alum (Al ⁺³)	2.03	1,561	\$5,142.27	108,620	
Chlorine (Cl ₂)	2.84	2,182	\$586.30	9,839	140
Fluoride (F ₂)	0.72	552	\$966.41	34,333	

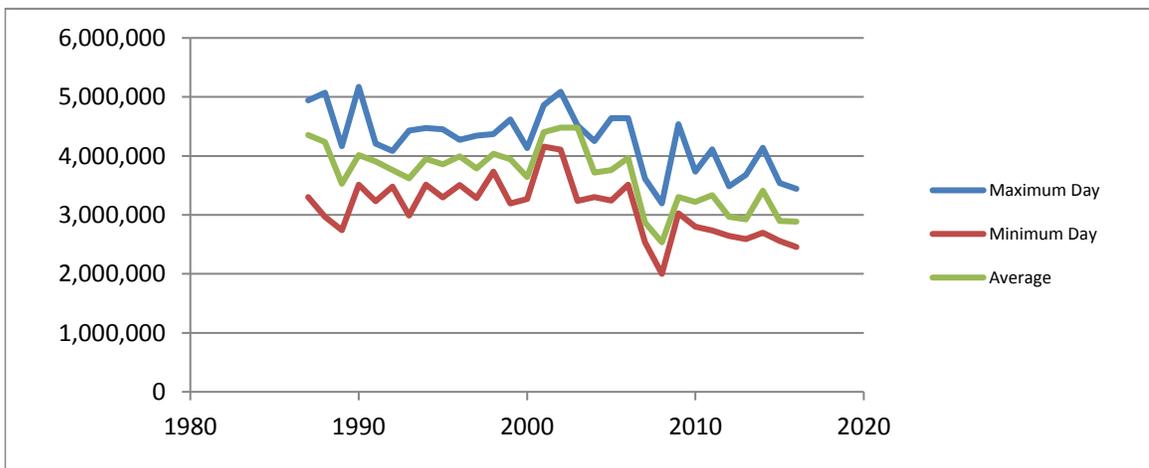
		REMARKS:			
Total Cost all Chemicals	\$6,694.98				
Chemical Cost per Mil. Gallon Treated	\$72.55				
Chemical Cost per Mil. Gallon Delivered	\$74.87				
PLANT UTILITIES SUMMARY					
Electric:					
Total KWH	190,200	***includes measure of melted snow			
Total Power Cost	\$ 13,314.00	visit the City of Saint Joseph's Home page at www.sjcity.com			
Power Cost per Million Gallon Treated	\$ 144.28	e-mail comments to either: operator@sjcity.com or galiment@sjcity.com			
Power Cost per Million Gallon Delivered	\$ 172.49	WEATHER CONDITIONS AT THE PLANT		Air Temp. °F	
Gallons Pumped per KWH		SJWW Weather Computer		Avg.	29.2
		Rain Guage, Inches	0.62	Max.	51.1
		days it rained***	11	Min.	8
Natural Gas:		Wind Speed, Avg	12.7	Lake Temp. °F	
Metered Cubic Feet	9654	Wind Speed, Max	54	Avg.	37.3
Natural Gas Cost	\$4,851.04	Prevailing Wind Dir.	SE	Max	45.2
Emergency Power Diesel Fuel Inv., Gals.	North 1200	Lake Level (USACE)	579.23	Min	33.3
	South 300				

ST. JOSEPH WATER PLANT PUMPAGE-WATER DELIVERED

JANUARY 2016

Year	Average	Maximum Day	Minimum Day	Monthly Total
1987	4,351,994	4,941,900	3,301,500	134,911,800
1988	4,233,552	5,069,900	2,967,000	131,240,100
1989	3,530,145	4,163,100	2,741,800	109,434,500
1990	4,012,513	5,170,800	3,514,500	124,387,900
1991	3,904,890	4,208,600	3,231,700	121,051,600
1992	3,758,219	4,084,500	3,481,100	116,504,800
1993	3,622,235	4,431,700	2,990,500	112,289,300
1994	3,948,248	4,470,100	3,510,400	122,395,700
1995	3,859,761	4,448,700	3,299,200	119,652,600
1996	3,993,939	4,272,000	3,505,300	123,812,100
1997	3,788,782	4,344,400	3,286,700	117,452,250
1998	4,035,369	4,369,050	3,735,900	125,096,450
1999	3,946,455	4,616,550	3,193,000	122,340,100
2000	3,640,661	4,130,300	3,267,250	112,860,500
2001	4,400,261	4,858,780	4,157,200	136,408,100
2002	4,479,403	5,084,950	4,107,000	138,861,500
2003	4,479,403	4,514,060	3,238,250	113,163,010
2004	3,715,344	4,250,750	3,301,000	115,175,650
2005	3,758,500	4,641,410	3,240,000	116,513,490
2006	3,967,646	4,638,500	3,513,500	122,997,040
2007	2,872,435	3,614,000	2,534,000	89,045,500
2008	2,534,919	3,195,250	1,999,500	78,582,500
2009	3,302,903	4,536,750	3,024,250	102,390,440
2010	3,222,808	3,731,500	2,802,510	99,907,060
2011	3,336,597	4,108,987	2,735,414	103,434,507
2012	2,967,282	3,484,780	2,645,356	91,985,729
2013	2,923,828	3,681,495	2,588,294	90,638,675
2014	3,407,415	4,138,686	2,697,384	105,629,857
2015	2,898,958	3,539,342	2,559,148	89,867,686
2016	2,884,653	3,443,767	2,455,434	89,424,242

Rank	Year	Monthly Total
1	2002	138,861,500
2	2001	136,408,100
3	1987	134,911,800
4	1988	131,240,100
5	1998	125,096,450
6	1990	124,387,900
7	1996	123,812,100
8	2006	122,997,040
9	1994	122,395,700
10	1999	122,340,100
11	1991	121,051,600
12	1995	119,652,600
13	1997	117,452,250
14	2005	116,513,490
15	1992	116,504,800
16	2004	115,175,650
17	2003	113,163,010
18	2000	112,860,500
19	1993	112,289,300
20	1989	109,434,500
21	2014	105,629,857
22	2011	103,434,507
23	2009	102,390,440
24	2010	99,907,060
25	2012	91,985,729
26	2013	90,638,675
27	2015	89,867,686
28	2016	89,424,242
29	2007	89,045,500
30	2008	78,582,500



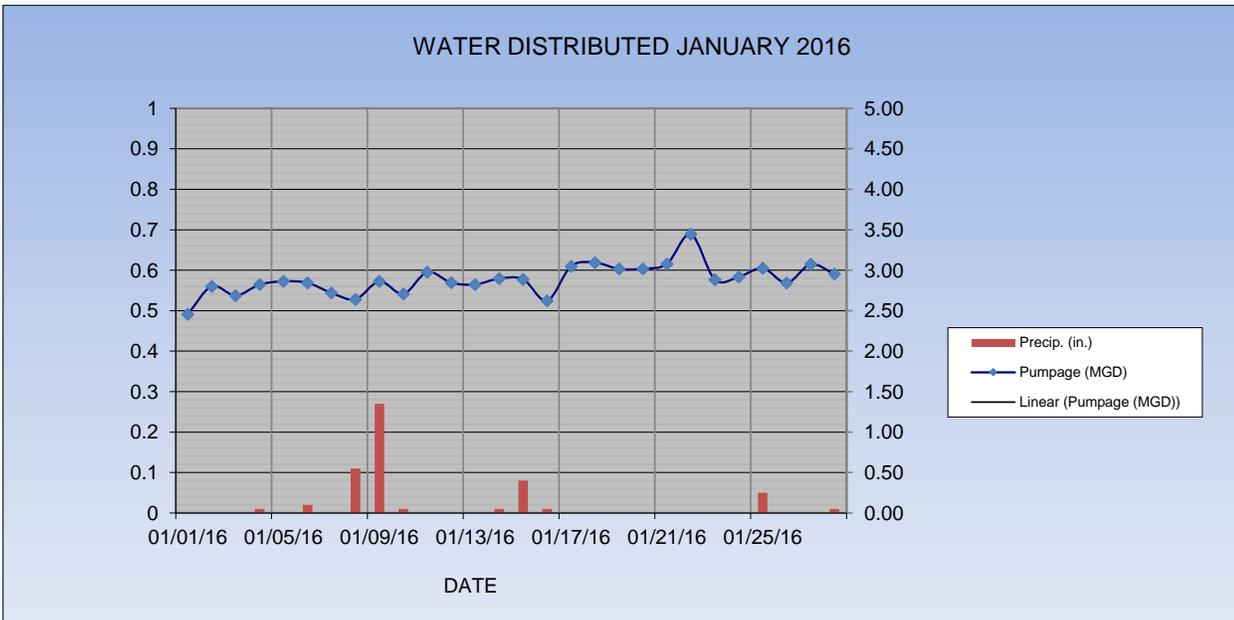
**ST JOSEPH WATER PLANT PUMPAGE-WATER DELIVERED/RAINFALL
JANUARY 2016**

DATE	PUMPAGE (gallons)	PUMPAGE (MGD)	*RAINFALL (in)	Day to Day Comparison 2016/2015	
				2016	2015
01/01/16	2,455,434	2.46	0	2,455,434	2,670,867
01/02/16	2,800,312	2.80	0	2,800,312	2,739,873
01/03/16	2,686,188	2.69	0	2,686,188	2,559,148
01/04/16	2,822,688	2.82	0.01	2,822,688	2,725,100
01/05/16	2,861,814	2.86	0	2,861,814	2,905,056
01/06/16	2,844,081	2.84	0.02	2,844,081	2,706,409
01/07/16	2,719,097	2.72	0	2,719,097	2,826,619
01/08/16	2,640,872	2.64	0.11	2,640,872	2,748,030
01/09/16	2,862,397	2.86	0.27	2,862,397	2,896,033
01/10/16	2,706,981	2.71	0.01	2,706,981	3,539,342
01/11/16	2,976,226	2.98	0	2,976,226	3,021,685
01/12/16	2,846,047	2.85	0	2,846,047	3,149,298
01/13/16	2,824,431	2.82	0	2,824,431	3,237,113
01/14/16	2,896,828	2.90	0.01	2,896,828	2,831,639
01/15/16	2,887,086	2.89	0.08	2,887,086	3,137,471
01/16/16	2,622,272	2.62	0.01	2,622,272	3,206,231
01/17/16	3,047,939	3.05	0	3,047,939	2,945,341
01/18/16	3,094,373	3.09	0	3,094,373	2,825,092
01/19/16	3,015,526	3.02	0	3,015,526	2,903,758
01/20/16	3,018,505	3.02	0	3,018,505	2,847,311
01/21/16	3,077,569	3.08	0	3,077,569	2,839,979
01/22/16	3,443,767	3.44	0	3,443,767	2,861,017
01/23/16	2,884,498	2.88	0	2,884,498	3,014,855
01/24/16	2,917,498	2.92	0	2,917,498	2,567,054
01/25/16	3,023,959	3.02	0.05	3,023,959	2,933,369
01/26/16	2,842,985	2.84	0	2,842,985	3,215,197
01/27/16	3,072,560	3.07	0	3,072,560	2,803,736
01/28/16	2,952,490	2.95	0.01	2,952,490	2,816,407
01/29/16	2,845,654	2.85	0	2,845,654	2,843,267
01/30/16	2,940,750	2.94	0	2,940,750	2,700,381
01/31/16	2,793,416	2.79	0.04	2,793,416	2,851,009
TOTAL	89,424,242	89.42	0.62	89,424,242	89,867,686

Monthly Average/Max Day/Minimum Day

Average Day	2,884,653
Maximum Day	3,443,767
Minimum Day	2,455,434

*Includes measure of melted snow.



STAGE 2 D/DBPR MONITORING-HALOACETIC ACIDS

JANUARY 2016

WSSN 3726

Date	04/08/15	04/08/15
Site	Lincoln Twp Hall (DBP-1)	Dane (DBP-2)
Dibromoacetic acid	<1	<1
Dichloroacetic acid	9.3	19
Monobromoacetic acid	<1	<1
Monochloroacetic acid	<2	<2
Trichloroacetic acid	9.4	21
<i>Total HAA5</i>	<i>18.7</i>	<i>40.0</i>

Date	07/17/15	07/17/15
Site	Lincoln Twp Hall (DBP-1)	Dane (DBP-2)
Dibromoacetic acid	1.1	1.1
Dichloroacetic acid	14	17
Monobromoacetic acid	<1	<1
Monochloroacetic acid	<2	2.5
Trichloroacetic acid	8.6	12
<i>Total HAA5</i>	<i>23.7</i>	<i>32.6</i>

Date	10/07/15	10/07/15
Site	Lincoln Twp Hall (DBP-1)	Dane (DBP-2)
Dibromoacetic acid	2	1.2
Dichloroacetic acid	13	16
Monobromoacetic acid	<1	<1
Monochloroacetic acid	<2	<2
Trichloroacetic acid	10	14
<i>Total HAA5</i>	<i>25</i>	<i>31.2</i>

Date	01/20/16	10/07/15
Site	Lincoln Twp Hall (DBP-1)	Dane (DBP-2)
Dibromoacetic acid	<1	
Dichloroacetic acid	18	16
Monobromoacetic acid	<1	<1
Monochloroacetic acid	<2	<2
Trichloroacetic acid	25	21
<i>Total HAA5</i>	<i>43</i>	<i>37.0</i>

	Lincoln Twp Hall (DBP-1)	Dane (DBP-2)
RAA (ppb)	27.6	35.2

CLEVELAND BOOSTER STATION

HILLTOP BOOSTER STATION

DATE	FLOW MGD	FEED GAL	CHL LBS/DAY	CHLORINE APPLIED mg/l	Cl ₂ PRE mg/l	Cl ₂ POST mg/l	Cl ₂ MON mg/l	FLOW MGD	FEED GAL	CHL LBS/DAY	CHLORINE APPLIED mg/l	Cl ₂ PRE mg/l	Cl ₂ POST mg/l	Cl ₂ MON mg/l	BOOSTER MGD
1-Jan	0.000	0	0.00	0.00				1.721	25	3.54	0.25				1.721
2-Jan	0.000	0	0.00	0.00				1.721	25	3.54	0.25				1.721
3-Jan	0.000	0	0.00	0.00				1.721	25	3.54	0.25				1.721
4-Jan	0.000	0	0.00	0.00	1.16	1.28	1.27	1.721	25	3.54	0.25	1.37	1.34	1.44	1.721
5-Jan	0.000	0	0.00	0.00	1.15	1.19	1.31	1.751	31	4.40	0.30	1.59	1.42	1.62	1.751
6-Jan	0.000	0	0.00	0.00	1.06	1.13	1.21	1.746	45	6.38	0.44	2.09	1.76	1.82	1.746
7-Jan	0.000	0	0.00	0.00	1.11	1.09	1.25	1.785	31	4.40	0.30	1.61	1.59	1.68	1.785
8-Jan	0.000	0	0.00	0.00	1.20	1.29	1.32	1.774	54	7.66	0.52	1.86	2.18	2.12	1.774
9-Jan	0.000	0	0.00	0.00				1.758	55	7.80	0.53				1.758
10-Jan	0.000	0	0.00	0.00				1.758	55	7.80	0.53				1.758
11-Jan	0.000	0	0.00	0.00	1.31	1.31	1.43	1.758	55	7.80	0.53	1.82	1.51	1.68	1.758
12-Jan	0.000	0	0.00	0.00	1.33	1.38	1.49	1.819	23	3.26	0.21	1.85	1.80	1.97	1.819
13-Jan	0.000	0	0.00	0.00	1.35	1.31	1.39	1.710	51	7.23	0.51	2.01	1.82	2.03	1.710
14-Jan	0.000	0	0.00	0.00	1.22	1.45	1.45	1.865	72	10.21	0.66	1.64	2.11	2.12	1.865
15-Jan	0.000	0	0.00	0.00	1.31	1.48	1.56	1.601	51	7.23	0.54	2.01	1.55	1.70	1.601
16-Jan	0.000	0	0.00	0.00				1.885	65	9.22	0.59				1.885
17-Jan	0.000	0	0.00	0.00				1.885	65	9.22	0.59				1.885
18-Jan	0.000	0	0.00	0.00				1.885	65	9.22	0.59				1.885
19-Jan	0.000	0	0.00	0.00	1.51	1.73	1.76	1.885	65	9.22	0.59	2.02	1.63	1.79	1.885
20-Jan	0.000	0	0.00	0.00	1.46	1.60	1.64	1.733	23	3.26	0.23	2.11	1.81	1.90	1.733
21-Jan	0.000	0	0.00	0.00	1.45	1.55	1.55	1.970	58	8.22	0.50	2.20	2.41	2.55	1.970
22-Jan	0.000	0	0.00	0.00	1.49	1.60	1.61	1.836	72	10.21	0.67	2.19	2.49	2.58	1.836
23-Jan	0.000	0	0.00	0.00				1.850	60	8.51	0.55				1.850
24-Jan	0.000	0	0.00	0.00				1.850	60	8.51	0.55				1.850
25-Jan	0.000	0	0.00	0.00	1.59	1.67	1.71	1.850	60	8.51	0.55	1.61	1.44	1.55	1.850
26-Jan	0.000	0	0.00	0.00	1.51	1.60	1.60	1.720	24	3.40	0.24	1.66	1.61	1.70	1.720
27-Jan	0.000	0	0.00	0.00	1.35	1.45	1.45	1.877	51	7.23	0.46	2.45	1.81	2.39	1.877
28-Jan	0.000	0	0.00	0.00	1.58	1.64	1.71	1.687	56	7.94	0.56	2.36	2.11	2.31	1.687
29-Jan	0.000	0	0.00	0.00	1.66	1.79	1.82	1.774	64	9.07	0.61	2.18	1.91	2.12	1.774
30-Jan	0.000	0	0.00	0.00				1.834	70	9.92	0.65				1.834
31-Jan	0.000	0	0.00	0.00				1.834	70	9.92	0.65				1.834
TOTAL	0.000	0	0.0					55.563	1,551	219.90					55.563
AVE DAY	0.000		0.0	0.00	1.4	1.4	1.5	1.7923		7.1	0.47	1.93	1.81	1.95	1.792
MAX	0.000		0.0	0.00	1.7	1.8	1.8	1.9702		10.2	0.67	2.45	2.49	2.58	1.970
MIN	0.000		0.0	0.00	1.1	1.1	1.2	1.6008		3.3	0.21	1.37	1.34	1.44	1.601
MONTHLY TOTALS:	Cleveland	Total MG Treated	0.000	0.000	SJCT EAST				Hilltop	Total MG Treated	55.563	Cleveland Pump Station:			0
		Untreated	0.000	0.000	Average Day			0.197		Untreated	55.563	Hilltop Pump Station:			55.563
Total Authority Flow:	59.9332		0.000	0.000	Month Total			6.107			0.000	TOTAL AUTHORITY (Trted.)			55.563

STAGE 2 D/DBPR MONITORING-TTHM

JANUARY 2016

WSSN 3726

Date	04/08/15	04/08/15
Site	Lincoln Twp Hall (DBP-1)	Dane (DBP-2)
Bromodichloromethane	6.6	8.9
Bromoform	<0.5	<0.5
Chloroform	10	23
Dibromochloromethane	2.4	2.5
<i>Total Trihalomethanes</i>	19	34.4

Date	07/17/15	07/17/15
Site	Lincoln Twp Hall (DBP-1)	Dane (DBP-2)
Bromodichloromethane	9.3	10
Bromoform	<0.5	<0.5
Chloroform	20	31
Dibromochloromethane	3.7	4
<i>Total Trihalomethanes</i>	33	45

Date	10/07/15	10/07/15
Site	Lincoln Twp Hall (DBP-1)	Dane (DBP-2)
Bromodichloromethane	7.3	8.6
Bromoform	<0.5	<0.5
Chloroform	16	27
Dibromochloromethane	2.8	3.2
<i>Total Trihalomethanes</i>	26.1	38.8

Date	01/20/16	01/20/16
Site	Lincoln Twp Hall (DBP-1)	Dane (DBP-2)
Bromodichloromethane	12	10
Bromoform	<0.5	<0.5
Chloroform	46	33
Dibromochloromethane	2.8	3
<i>Total Trihalomethanes</i>	60.8	46

	Lincoln Twp Hall (DBP-1)	Dane (DBP-2)
RAA (ppb)	34.7	41.1

MONTHLY CLIMATOLOGICAL SUMMARY

January

2016

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	30.5	26	35.6	11:30p	33	51	1952	26.1	8:30a	19	-10	1964	34.5	0	0	24.3	43	2:00a	WSW
2	33.9	26	36.7	5:00p	33	50	1950	31.1	6:00a	19	0	1968	31.1	0	0	22.2	45	9:30p	W
3	34	26	36.5	8:30a	33	66	1950	30.7	12:00m	18	-3	1979	31	0	0	18.9	35	1:00a	N
4	27.4	26	34.4	7:30a	33	59	1997	17.1	12:00m	18	-2	1979	37.6	0	0.01	9	35	9:00a	NNE
5	22.9	26	32.2	3:30p	33	62	1997	15	3:30a	18	-15	1999	42.1	0	0	5.1	23	11:30a	SE
6	30	26	38.4	4:00p	33	55	1998	22.2	3:00a	18	-2	1979	35	0	0.02	5.8	16	5:30a	SE
7	38.2	26	42.5	3:30p	33	51	1965	34.4	5:30a	18	-10	1988	26.8	0	0	3.4	13	4:30a	SE
8	40.9	25	45.6	11:30p	33	62	1965	37.5	9:00a	18	-13	1988	24.1	0	0.11	4.5	20	12:00m	ESE
9	39.5	25	45.3	12:30a	33	61	1965	35.7	10:00p	17	-1	1979	25.5	0	0.27	8.9	29	12:00m	N
10	26.3	25	37.1	1:00a	33	60	1975	16	12:00m	17	-7	1962	38.7	0	0.01	27.4	48	7:00a	N
11	15.7	25	25.7	12:00m	32	59	1975	9.8	11:30a	17	-10	1962	49.3	0	0	11.7	37	4:00a	SSE
12	20.6	25	29.2	12:30a	32	58	1960	17.1	10:30a	17	-1	1997	44.4	0	0	28.4	54	6:00a	WNW
13	16.5	25	33	12:00m	32	59	1950	8	10:00a	17	-7	1977	48.5	0	0	11.7	36	11:30p	SSE
14	36.7	25	46.5	11:30p	32	53	1950	24.7	5:30a	17	-1	1988	28.3	0	0.01	8.6	32	12:30a	SSE
15	40.6	25	46.5	1:30a	31	60	1949	33.3	10:30p	17	-7	1972	24.4	0	0.08	11	30	7:00p	SSE
16	31	25	33.8	12:30a	31	60	1949	25	12:00m	17	-17	1994	34	0	0.01	18.8	40	11:30p	W
17	14	25	25	12:30a	31	59	1952	10.6	2:30p	17	-7	1957	51	0	0	23.8	44	3:00p	WNW
18	13.7	24	15.2	7:30p	31	57	1996	12	2:30a	17	-7	1994	51.4	0	0	20.7	38	2:00a	W
19	16.9	24	19.8	10:00a	31	57	1996	14.3	10:30p	16	-17	1994	48.1	0	0	10	29	12:30a	WNW
20	20.6	24	26.3	8:00p	31	52	1954	15	12:30a	16	-10	1985	44.4	0	0	5.4	17	12:00m	SE
21	24.4	24	28	5:30p	31	50	1957	19.9	4:00a	16	-13	1984	40.6	0	0	6.6	19	1:30a	SSE
22	27.6	24	31.3	1:30p	31	56	1957	24.8	12:00m	16	-9	1970	37.4	0	0	4.3	18	7:00p	NNE
23	26.1	24	31.1	1:00p	31	56	1967	21.2	9:00a	16	-4	1963	38.9	0	0	4.1	15	12:00m	NE
24	28.2	24	33.6	4:00p	31	64	1967	22.4	9:00a	16	-6	1963	36.8	0	0	8.4	31	11:00a	SW
25	35.9	24	44.3	12:00m	31	68	1950	29.1	6:00a	16	-8	1961	29.1	0	0.05	5.3	29	12:00m	SSE
26	33.8	24	44.2	12:30a	31	66	1950	30.3	8:30p	16	-5	1987	31.2	0	0	24.3	47	4:00a	WSW
27	30.3	24	32.7	12:00m	32	54	1973	28	2:00p	16	2	1986	34.7	0	0	14.5	33	10:00p	W
28	34.9	25	37.3	4:00p	32	52	1970	32.7	12:30a	16	-7	1977	30.1	0	0.01	18.9	35	3:00a	SSW
29	30.3	25	34.7	12:00m	32	49	1975	26.6	9:00a	16	-8	1955	34.7	0	0	11.3	33	12:30a	N
30	40.1	25	46.3	12:00m	32	56	1988	34.6	12:30a	16	-8	1949	24.9	0	0	8.2	27	5:00a	SSW
31	43.2	25	51.1	1:00p	32	62	1989	36.9	8:30p	16	-3	1949	21.8	0	0.04	8.6	24	1:30a	SE
AVE													35.8	0.0	0.0	12.7	31.5		SE
MAX	43.2	26	51.1			68		37.5		19	2		51.4	0	0.27	28.4	54.0		
MIN	13.7	24	15.2					8		16	-17		24.1	0	0	3.4	13		
TOTAL															0.62				

Max Rain: 0.27 ON 01/09/16
 Days of Rain: 6 (>.01 in) 2 (>.1 in) 0 (>1 in)