

CITY OF ST. JOSEPH WATER FILTRATION PLANT

OPERATIONAL REPORT

NOVEMBER 2014



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-NOVEMBER 2014

Water demand in November was down by 14,262,401 gallons or 15% from last year. This year 81,950,687 gallons were delivered which compares to 96,213,088 gallons delivered in November of 2013. Interestingly, while down from 2014 this usage is comparable to that seen in 2012 if one factors in Fairplain. This consumption pattern extends a trend first observed in August of this year. Also apparent in November is a decrease in average day consumption that began in 1995 and parallels a similar trend for October as we reported last month. The 2014 pumpage ranks 28th in the 30 year tabulation dating back to 1985.

GENERAL ACTIVITIES

Strategic Capital Improvement Plan

The SCIP project is complete. The report will be presented to a joint meeting of the St. Joseph City Commission and the Water Services Joint Operating Board to be held on January 20, 2015. The St. Joseph SCIP is timely since we learned in October that the Michigan Department of Environmental Quality will be requiring all water supplies to submit capital improvement plans by January 1, 2016.

Water Plant Security

Installation of the security system is nearly complete. Two weather rated high resolution cameras are on order and should be in soon. Plant staff and Mead & White began running conduit and cable in August and worked with Simplex Grinnell and Double K Enterprises to install the card readers, cameras and monitoring equipment. The system is now on line and operating.

Process Chlorination

In light of the elevated disinfection byproducts results obtained in September and October plant staff is working to reduce their formation by shifting chlorination in the process. One of the treatment strategies available to reduce DBP's is the reduction of chlorine feed in the clarifiers prior to sedimentation. By reducing the chlorine dose in the wetwell and proportionately increasing it in the applied prior to filtration we hope to achieve lower DBP formation. In consultation with MDEQ and CH2M Hill and upon close review of treatment records we initiated this process in early December. Plant staff is also monitoring chlorine contact time to assure optimum disinfection.

Shoreline Protection

Lake Michigan is up 35 inches since its record low in November of 2012. Staff is closely monitoring the condition of the shoreline protection for the facility. The City of St. Joseph has always been diligent in protecting the water plant from shoreline erosion. Shore protection was fortified in 1929, 1952, 1974 and most recently 2008. In 2008, the USACE and the City participated in a \$600,000 Section 14 Project to replace 325 ft. of rip rap extending from the northerly boundary of the plant south. The protection consisted of a geotextile fabric layer followed by a layer of small mattress stone. On top of the mattress zone large granite rock weighing from 4,000-6,000 lbs. per piece was placed by means of a heavy excavator. The stone was trucked in from a quarry in Wisconsin and the contractor was Luedke Marine of Frankfort, MI.

A section of the stone was moved temporarily to facilitate construction of the shorewell in 2011. USACE returned to inspect the project to assure that the reconstructed shore protection met USACE standards. The City is required to perform annual inspections. In spite of the size of the rock, its cumulative weight and the engineered design, it is expected to degrade over time. In light of this eventual reality and the fact that the protection for the remainder of the facility dates back to the 1970's replacement has been funded in the SCIP. The City has requested a courtesy inspection by USACE which should be conducted weather permitting in mid-December or early spring 2015.

Cross Connection Control Inspections

Hydro Designs completed 20 inspections in the City during the week of November 17th. The total number of contract inspections completed during the year was 311. There are currently 22 accounts that are in non-compliance. The majority of these involve backflow prevention devices that have not been tested by a licensed plumber and the remainder require correction of the plumbing/device. These customers were notified by mail and will be called. If they do not comply they will be shut off.

D/DBPR Stage 2 October Authority Monitoring

Laboratory analysis of the October sample taken on the 15th revealed a HAA5 result of 105 ppb. This is a concern since the running annual average must not exceed 60 ppb. A second sample was taken on October 31st in which a result of 38 ppb was found. Given the low levels of HAA5 found throughout the year we expect to remain in compliance. Nonetheless, plant staff is actively exploring measures to improve HAA5 reduction through treatment, on-line laboratory analysis and diligent flushing of the distribution system. The City has undertaken unidirectional flushing this fall in the City service area and will resume in the spring.

Microscopy/Monitor

This year we obtained a low power microscope and monitor interface which enables staff to observe and identify microscopic matter, particularly algae in the plant raw water. Shawn and I were impressed with the microscope on board the Grand Valley State University research vessel and brought the idea back to St. Joseph in July. Ironically the blue green algae story on Lake Erie broke in early August underlining the importance of knowing from a biological standpoint what is in our raw water. Nonetheless, we have been somewhat disappointed as budding microbiologists in what we have found in Lake Michigan water.

Reclaim Basin Cleaning

Last month we reported to you that the reclaim basin would be cleaned this year. However, due to the lengthy work in the reservoir and the deteriorating weather this project will likely be deferred until the Spring.

Water Plant Operator

With the recent openings at Public Services, Josh Frazee bid on the Water Service position and was accepted. This created an opening at the water plant. The operator position will be posted internally and then advertised if an internal candidate is not found. We will miss Josh and appreciate the contribution he made to the water plant.

City Water Supply
Its Growth and Development From a Single Pump to a Magnificent and Complete System
The News-Palladium (Benton Harbor, Michigan) Tuesday, October 20, 1896. Page 3.

There was a time when the residents of St. Joseph drank nothing but water, but that was several years before the silver question became an issue and is but a dim recollection in the minds of even the clearest headed members of our present populace. There was a time when the residents of St. Joseph took turns carrying the gourd to the river and bringing it back full of sparkling water to quench ye thirst and to use in the cooking of ye slap jucks or the brewing of ye family medicines. But that was a long time before Mayor Starr became a popocrat or before the town learned to know what a genuine comfort a mayor was. It was in the days that the hardy swain yanked the milk from the festive goat and the housewife cooked the same into delicious corn bread which had the consistency of a paving brick and was used in emergencies to ward off the attacks of scalp scouting Indians.

But strange as it may seem under such unfavorable circumstances, the town grew and a generation or two after, the carrying of the gourd to the river ceased to be an anticipated pleasure and it was decided by common consent of all the people to have a town pump. The well was dug-it was well dug and the town took a holiday and put in the pump. The pump was made after a special order, complied, signed, sealed and delivered by a committee of ten trusted citizens. The pump was a mammoth affair and began coming from the factory two months before the last piece arrived. It had laid corded up back of the town hall until all of its numerous parts arrived, then the various parts were put together and as we have hitherto mentioned, the town took a day off and put in the pump. There were speeches by some of the leading lights of the town and singing of patriotic songs by the entire assemblage. Then there was a scramble to get the first glass of water. A deacon of the Methodist church, the only man in town who could swear under his breath, and an able body of assistants reverently grasped the handle of the pump-and pumped. The man who by dint of muscle got the cup for the first drink, gulped down a pint of fluid which was a delightful mixture of oil, sand, grease and earth gas, went home and was sick seven months with a delirium fever. One or two dogs who licked up the drippings, were attacked with hydrophobia, got the crowd into a state of reckless confusion and the town pump for the time being was voted a failure.

But after judicious legislation and the death of few brave souls, confidence was restored and the policy of town pumpism grew steadily in public favor. A few public spirited citizens and leaders of fashion took to drinking pump water and the infant enterprise did business 24 hours a day and a side door business every Sunday. The pump was located right at the present corner of State and Ship streets and was the cause of constant anxiety to the town authorities. It was constantly getting out of repair and there were only two men in town who could fix it. They were Joe Hagar and Joe Hone. The old pump with its forty feet of pipe used to be hauled out onto dry land about three times a week on the average and it came about that in later years the first item in the annual appropriation bill of the town board would be, "Repairs on the town pump. \$1,797.46."

But one day something happened that changed all this, and those of the readers who remember the occurrence will vouch for our veracity. The pump one morning began giving mineral water. The most nauseating liquid ever came out of the ground was brought to light by that pump. But some men about town who had tasted mineral water said that this was thus and so it went out that we had an overflowing well of fine mineral water. Its healing propensities were great. One man tried it for consumption. It fixed the consumption all right for the man died. Then the pump experts took up the machine and found that a rat had crawled into the pipe and died.

There was only one thing to do then and that was to have a water works. It was put to a vote and an overwhelming majority said that they should be built. I.W. Newcomer did a good job building the waterworks and today it stands as one of the most complete systems in Michigan. The water has been carefully tested and it would be difficult to get a purer liquid. It is taken a sufficient distance out in the lake to keep it pure and fresh. The revenue from the water works is great and the magnificent plant is paying for itself under the judicious management of the board of public works.

**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**

November 2014

DISTRIBUTION:	
Total Gallons	81,950,687
Average Day	2,731,690
Maximum Day	3,218,063
Minimum Day	2,225,326

TREATMENT:	
Total Low Service	86,651,459
Wash Water Gals.	1,314,235
Wash Water %	1.54%
Plant Use Gals.	1,590,289
Plant Use %	1.85%

FILTRATION:		
Ave. Filter Run	66.9	hours
Ave. Filter Rate	1.85	g/sqft/min
Filter Eff. Index	273.1	
Ave. Loss of Head	1.3	feet
Plant Sewer Usage Oct/Nov \$ 11,002		

LABORATORY REPORT		
Average of	Raw	Tap
Chlorides mg/L	18.8	18.8
Fluoride mg/L	0.16	0.95
Alkalinity mg/L	112	98
Hardness mg/L	140	137
pH	8.0	7.3
Calcium mg/L	37	38
Magnesium mg/L	11	11
Turbidity NTU	4.31	0.03
Temperature °F	47	
Total Coliform		0.0
Chlorine Residual mg/L Free		
Mixing Basin		1.63
Applied		1.77
Tap		1.67
Distribution		1.09

TREATMENT CHEMICAL SUMMARY:					
	Applied mg/L	Total Lbs.	Cost	Inventory lbs.	Days Supply
		CHEMICAL			
Alum (Al ⁺³)	1.81	1,307	\$3,803.11	4,693	108
Chlorine (Cl ₂)	3.06	2,217	\$576.42	12,937	175
Fluoride (F ₂)	0.66	477	\$1,431.27	3,438	216

			REMARKS:			
Total Cost all Chemicals		\$5,810.80				
Chemical Cost per Mil. Gallon Treated		\$67.06				
Chemical Cost per Mil. Gallon Delivered		\$70.91				
PLANT UTILITIES SUMMARY						
Electric:						
Total KWH		5,440	***includes measure of melted snow			
Total Power Cost		\$426.06	visit the City of Saint Joseph's Home page at www.sjcity.com			
Power Cost per Million Gallon Treated		\$134.54	e-mail comments to either: operator@sjcity.com or alimenti@sjcity.com			
Power Cost per Million Gallon Delivered		\$159.84	WEATHER CONDITIONS AT THE PLANT			
Gallons Pumped per KWH		15064	SJWW Weather Computer		Air Temp. °F	
			Rain Guage, Inches	1.89	Max. 60.4	
			days it rained***	8	Min. 19.4	
Natural Gas:			Wind Speed, Avg	13.5	Lake Temp. °F	
Metered Cubic Feet		0	Wind Speed, Max	60	Avg. 46.7	
Natural Gas Cost		-	Prevailing Wind Dir.	South	Max 55.7	
Emergency Power Diesel Fuel Inv., Gals.	Full	2400	Lake Level (USACE)	579.1	Min 39.2	
Emergency Power Diesel Fuel Inv., Gals.	3/4 Full	620				

CLEVELAND BOOSTER STATION

HILLTOP BOOSTER STATION

BOTH

DATE	MGD TREATED	FEED METER GAL	CHL LBS/DAY	CHLORINE APPLIED mg/l	Cl ₂ RES PRE mg/l	Cl ₂ RES POST mg/l	Cl ₂ RES MON mg/l	MGD TREATED	FEED METER GAL	CHL LBS/DAY	CHLORINE APPLIED mg/l	Cl ₂ RES PRE mg/l	Cl ₂ RES POST mg/l	Cl ₂ RES MON mg/l	MGD TREATED BOTH
1-Nov	1.421	78	11.06	0.93				0.494	0	0.00	0.00				1.915
2-Nov	1.421	78	11.06	0.93				0.494	0	0.00	0.00				1.915
3-Nov	1.421	78	11.06	0.93	1.83	1.81	1.97	0.494	0	0.00	0.00	1.68	1.71	1.75	1.915
4-Nov	0.000	0	0.00	0.00	1.74	1.74	1.81	1.160	36	5.10	0.53	2.17	2.04	2.23	1.160
5-Nov	1.524	87	12.33	0.97	1.77	1.79	1.88	0.000	0	0.00	0.00	1.80	1.76	1.88	1.524
6-Nov	0.000	0	0.00	0.00	1.65	1.61	1.72	2.117	56	7.94	0.45	1.95	1.96	2.03	2.117
7-Nov	1.119	63	8.93	0.96	1.71	1.69	1.84	0.009	4	0.57	7.82	1.71	1.75	1.83	1.128
8-Nov	1.084	61	8.65	0.96				0.588	13	1.84	0.38				1.671
9-Nov	1.084	61	8.65	0.96				0.588	13	1.84	0.38				1.671
10-Nov	1.084	61	8.65	0.96	1.26	1.26	1.31	0.588	13	1.84	0.38	1.21	1.21	1.28	1.671
11-Nov	0.000	0	0.00	0.00	1.16	1.19	1.21	1.681	32	4.54	0.32	2.20	1.64	1.84	1.681
12-Nov	1.471	55	7.80	0.64	1.31	1.29	1.33	0.000	0	0.00	0.00	2.19	1.37	1.50	1.471
13-Nov	0.000	0	0.00	0.00	1.16	1.17	1.22	1.474	24	3.40	0.28	2.04	1.75	1.66	1.474
14-Nov	1.455	76	10.78	0.89	1.87	1.77	1.81	0.000	0	0.00	0.00	1.71	1.40	1.39	1.455
15-Nov	0.937	40	5.67	0.73				0.764	16	2.27	0.36				1.701
16-Nov	0.937	40	5.67	0.73				0.764	16	2.27	0.36				1.701
17-Nov	0.937	40	5.67	0.73	2.20	1.66	1.87	0.764	16	2.27	0.36	1.37	1.48	1.62	1.701
18-Nov	1.679	90	12.76	0.91	1.81	1.65	1.75	0.000	0	0.00	0.00	1.30	1.39	1.49	1.679
19-Nov	0.000	0	0.00	0.00	1.66	1.58	1.62	1.635	20	2.84	0.21	1.65	1.57	1.70	1.635
20-Nov	2.118	111	15.74	0.89	2.20	1.78	1.82	0.000	0	0.00	0.00	1.33	1.41	1.47	2.118
21-Nov	0.000	0	0.00	0.00	1.53	1.51	1.68	1.735	17	2.41	0.17	2.19	1.81	1.90	1.735
22-Nov	0.529	14	1.98	0.45				1.134	11	1.56	0.16				1.664
23-Nov	0.529	14	1.98	0.45				1.134	11	1.56	0.16				1.664
24-Nov	0.529	14	1.98	0.45	1.31	1.29	1.33	1.134	11	1.56	0.16	1.96	1.58	1.60	1.664
25-Nov	1.744	92	13.04	0.90	2.20	1.81	1.95	0.000	0	0.00	0.00	1.41	1.41	1.47	1.744
26-Nov	0.000	0	0.00	0.00	1.78	1.69	1.83	1.695	25	3.54	0.25	1.96	1.65	1.70	1.695
27-Nov	0.878	46	6.52	0.89				0.841	5	0.71	0.10				1.718
28-Nov	0.878	46	6.52	0.89				0.841	5	0.71	0.10				1.718
29-Nov	0.878	46	6.52	0.89				0.841	5	0.71	0.10				1.718
30-Nov	0.878	46	6.52	0.89				0.841	5	0.71	0.10				1.718
TOTAL	26.532	1,337	189.56					23.807	354	50.19					50.339
AVE DAY	0.884		6.31866	0.63	1.675	1.5717	1.6639	0.7936		1.673	0.44	1.77	1.61	1.69	1.678
MAX	2.118		15.7376	0.97	2.2	1.81	1.97	2.1173		7.93968	7.82	2.2	2.04	2.23	2.118
MIN	0.000		0	0.00	1.16	1.17	1.21	0.0000		0	0.00	1.21	1.21	1.28	1.128
MONTHLY TOTALS:	Cleveland	Total MG Treated	26.532	SJCT-EAST	0.000	TOTAL MONTH	4.615	Hilltop	Total MG Treated	23.807	Cleveland Pump Station:	22.324	Hilltop Pump Station:	22.324	26.532
Total Authority Flow:	54.783	Untreated	26.532	AVE DAY		0.154		Untreated	1.483	TOTAL AUTHORITY (Trted.)	48.856				

Monthly Maintenance Notes

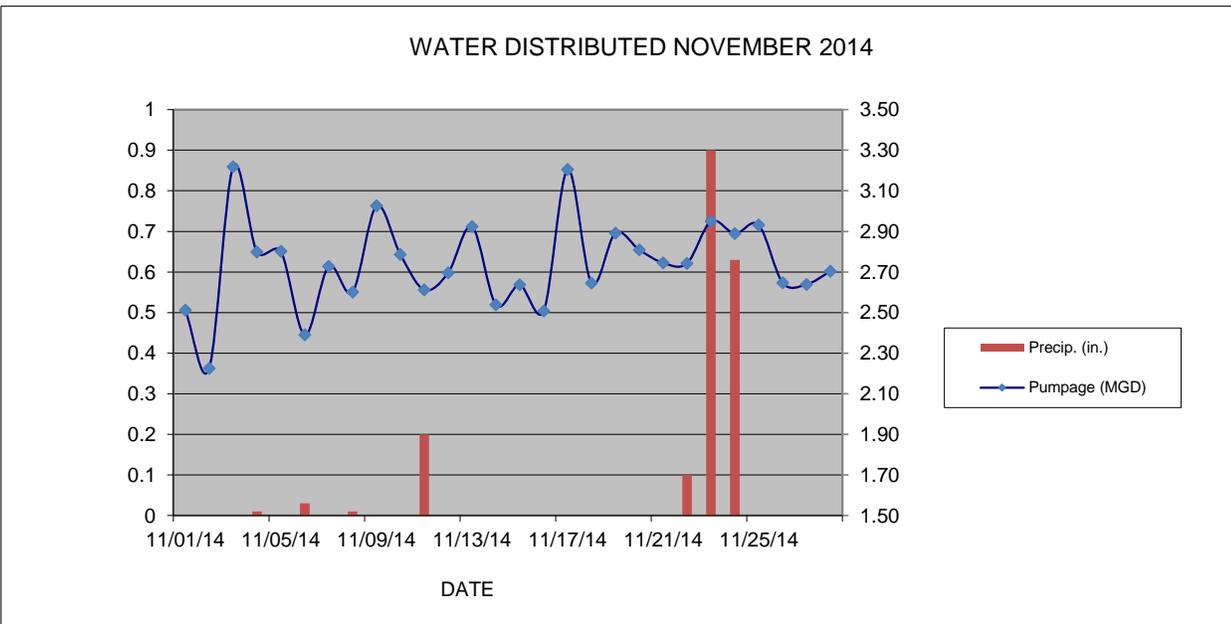
November 2014

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. Mow and Grounds Maintenance at Plant, Booster Stations and Towers
10/27/14	Southwest Transport - Repaired sink holes at the Lincoln Tower around storm/overflow drains in yard and grouted in bottom of man holes to eliminate wash outs
11/06/14	Eaton - Programed VFD for New Motor on High Service # 3 Pump
11/06/14	South Reservoir back in service after cleaning and Inspection
11/11/14	Changed Drive Belt on #2 Alum Feeder
11/12/14	Installed new blower motor on Unit Heater in Clarifier # 2 & #3 room
11/17/14	Peerless Midwest - Coupled Pump and Motor for High Service # 3 Pump tested pump under load, H.S. # 3 back in service
11/18/14	Installed new colorimeter in Raw Water CL17
11/19/14	Rebuilt Fluoride Feed Pump # 2
11/19/14	Hach - Quarterly service and calibration of all Filter Turbidimeters and TOC Machine.
11/20/14	Installed new blower motor on Unit Heater in Filters 1-4 drain room
11/21/14	Installed new blower motor on South Low Service Furnace/Vent Fan
11/23/14	Replace Sample Pump for filters 1-4

**ST JOSEPH WATER PLANT PUMPAGE-WATER DELIVERED/RAINFALL
NOVEMBER 2014**

DATE	PUMPAGE (gallons)	PUMPAGE (MGD)	Rainfall (in)*	November 2013
11/01/14	2,511,406	2.51	0	3,402,360
11/02/14	2,225,326	2.23	0	2,873,629
11/03/14	3,218,063	3.22	0	3,299,927
11/04/14	2,797,755	2.80	0.01	3,524,295
11/05/14	2,801,524	2.80	0	2,967,721
11/06/14	2,389,696	2.39	0.03	3,224,448
11/07/14	2,727,624	2.73	0	3,099,029
11/08/14	2,601,266	2.60	0.01	3,066,943
11/09/14	3,025,339	3.03	0	3,054,564
11/10/14	2,786,315	2.79	0	3,071,295
11/11/14	2,611,999	2.61	0.2	3,302,974
11/12/14	2,695,330	2.70	0	3,028,601
11/13/14	2,923,586	2.92	0	3,193,937
11/14/14	2,537,880	2.54	0	3,027,113
11/15/14	2,637,109	2.64	0	3,363,497
11/16/14	2,507,667	2.51	0	2,989,556
11/17/14	3,204,852	3.20	0	3,081,643
11/18/14	2,644,418	2.64	0	3,304,410
11/19/14	2,891,886	2.89	0	4,011,705
11/20/14	2,809,013	2.81	0	3,550,847
11/21/14	2,744,847	2.74	0	3,467,585
11/22/14	2,742,733	2.74	0.1	2,985,745
11/23/14	2,949,640	2.95	0.9	3,190,159
11/24/14	2,888,702	2.89	0.63	3,184,617
11/25/14	2,931,229	2.93	0	3,062,178
11/26/14	2,646,707	2.65	0	3,404,044
11/27/14	2,638,728	2.64	0	3,106,438
11/28/14	2,703,134	2.70	0	3,354,914
11/29/14	2,502,990	2.50	0.01	2,900,094
11/30/14	2,653,925	2.65	0	3,118,820
TOTAL	81,950,687	81.95	1.89	96,213,088

Average Day	2,731,690
Maximum Day	3,218,063
Minimum Day	2,225,326

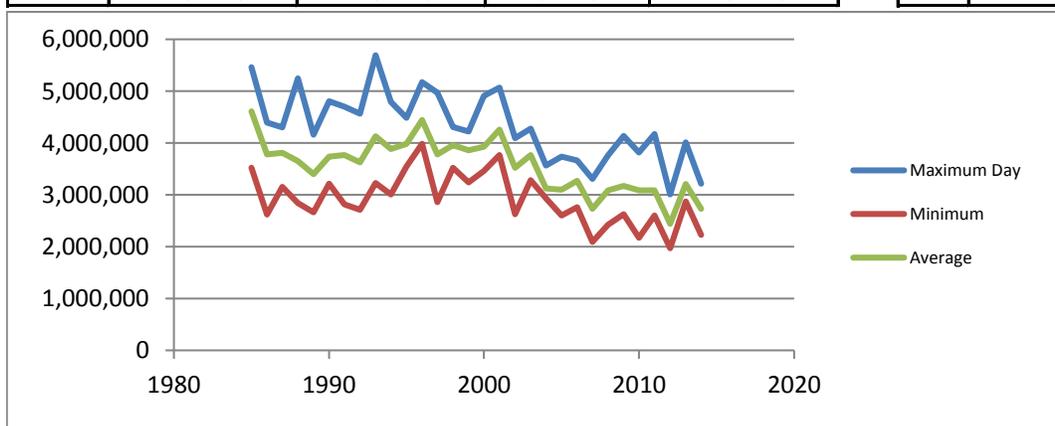


ST. JOSEPH WATER PLANT PUMPAGE-WATER DELIVERED

NOVEMBER 2014

Year	Average	Maximum Day	Minimum	Monthly Total
1985	4,610,307	5,463,200	3,524,300	138,309,200
1986	3,778,080	4,393,000	2,620,300	113,342,400
1987	3,810,773	4,301,500	3,156,200	114,323,200
1988	3,647,963	5,249,400	2,837,900	109,438,900
1989	3,400,317	4,163,000	2,660,300	102,009,500
1990	3,736,293	4,806,000	3,215,400	112,088,800
1991	3,767,847	4,698,400	2,817,000	113,035,400
1992	3,627,230	4,566,400	2,713,900	108,816,900
1993	4,128,737	5,692,700	3,226,800	123,862,100
1994	3,884,147	4,791,400	3,009,000	116,524,400
1995	3,983,600	4,483,450	3,548,500	119,508,000
1996	4,444,210	5,170,950	3,983,750	133,326,300
1997	3,781,002	4,971,500	2,861,500	113,430,050
1998	3,956,542	4,309,600	3,519,500	118,696,520
1999	3,862,057	4,222,000	3,238,600	115,861,700
2000	3,925,378	4,906,750	3,458,750	117,761,350
2001	4,260,085	5,069,850	3,767,830	127,802,550
2002	3,523,023	4,091,750	2,626,010	105,690,700
2003	3,764,779	4,275,250	3,284,340	112,943,380
2004	3,121,532	3,563,000	2,932,000	93,645,960
2005	3,100,771	3,738,500	2,601,010	93,023,130
2006	3,272,130	3,661,750	2,762,000	98,163,900
2007	2,727,424	3,304,320	2,094,500	81,822,720
2008	3,083,225	3,763,500	2,424,250	92,496,750
2009	3,173,639	4,134,540	2,624,360	95,209,160
2010	3,086,018	3,816,617	2,170,172	92,580,535
2011	3,086,301	4,173,075	2,600,107	92,589,043
2012	2,440,805	3,008,047	1,969,902	73,224,159
2013	3,207,103	4,011,705	2,873,629	96,213,088
2014	2,731,690	3,218,063	2,225,326	81,950,687

Rank	Year	Monthly Total
1	1985	138,309,200
2	1996	133,326,300
3	2001	127,802,550
4	1993	123,862,100
5	1995	119,508,000
6	1998	118,696,520
7	2000	117,761,350
8	1994	116,524,400
9	1999	115,861,700
10	1987	114,323,200
11	1997	113,430,050
12	1986	113,342,400
13	1991	113,035,400
14	2003	112,943,380
15	1990	112,088,800
16	1988	109,438,900
17	1992	108,816,900
18	2002	105,690,700
19	1989	102,009,500
20	2006	98,163,900
21	2013	96,213,088
22	2009	95,209,160
23	2004	93,645,960
24	2005	93,023,130
25	2011	92,589,043
26	2010	92,580,535
27	2008	92,496,750
28	2014	81,950,687
29	2007	81,822,720
30	2012	73,224,159



DISTRIBUTION REPORT

For the Month of November 2014

Activity	Number	Description
Water Main Breaks	2	
MISS DIGS	179	
Delinquent Shut Off	24	24 in City, 3 in Royalton Township
Delinquent Shut Off (Broken Payment Plans)		
Hydrants (Repaired/Replaced)		Replaced broken hydrant at Langley & Kingsley (City) Caused two main breaks due to water hammer in October
Valves	0	
Taps (1")		4760/4762 Small Court (Duplex), (LCT) Well to mun water 516 Dunewood (City), New construction
New Main Construction		Fox Crossing II. (LCT). Between Maiden Lane & Glenlord and Cleveland & Red Arrow. Flow tested. Bac T Pass Leon Barber, Merritt. Placed into service November 15.
Cross Connection Control (Hydro Designs)	20	Inspections (City)
Service Work (system valves)	9	
Water Service Repairs	0	
Repair of Curb box/Shut-Off Valves	0	
Water Quality Complaint(s)	0	
Unidirectional Flushing Program (City)		1,636,000 gallons (SJ)
Hydrant Flushing to maintain water quality		
Hydrant Flushing (Stage 2 Auth Oct)		128,385 gallons (LCT)
Staff Education/Training	0	
Overtime-Total	19.5	(Including Sanitary and Storm)
Turn Off	15	(Note: This number does not include delinquent Shut off)
Turn On	5	
Finals	79	
Meter Repair		
Meter Repair/Replacement	37	Verify Read 3
Per detail	4	New Installation 11
Meter leaking	4	New Installation-Benton Harbor
Stopped Meter	15	Replaced/various reasons
Faulty Register		Rockwell Replacement
Frozen Meter	2	Mxu Replaced
Move Meter Inside	1	Sprinkler meter removed/line capped
Hard to read	8	Removals 2
Replace/Adding Sprinkler Meter		Curb box location 1
Damage to Trt		Broken Remote
New Plumbing	2	Noisy Meter
New siding	1	Upgrade 5/8" to 3/4"
Meter sent out for testing		Meter Change/Benton Harbor

CITY OF ST. JOSEPH WATER MAIN BREAK REPORT									
For the Month/Year of: November 2014									
#	Date	Location	Main Size	Gallons Lost	Break Type	Valves Turned	City Twp	Labor	Remarks
1	11/19/2014	2942 Sandra Terrace	8	4,000	Circum crack	4	SJCT	16	
2	11/19/2014	Wedgewood & Lincoln Avenue	6	2,000	crack	2	SJCT	16	
3									
4									
5									
6									
		Total Gallons Lost		6,000					

MONTHLY CLIMATOLOGICAL SUMMARY

NOVEMBER 2014

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	37.6	35	41.8	7:00p	42	69	1970	32.5	9:00a	27	11	1964	27.9	0	0	10.1	36	5:00a	NNE
2	42.1	35	50	4:00p	42	69	1982	34.9	8:00a	27	1	1976	22.5	0	0	5.1	16	2:00p	S
3	52.4	35	60.4	10:00p	41	67	1982	45.8	1:00a	27	-2	1976	11.9	0	0	9.3	32	10:00p	SSW
4	53.8	34	59.6	1:00a	41	64	1970	49.9	11:00p	26	10	1978	10.3	0	0.01	17.3	36	12:00m	SSW
5	51.3	34	55.1	8:00p	41	65	1982	48.8	8:00a	26	5	1991	13.1	0	0	10.9	39	2:00a	W
6	47.7	33	53.2	1:00a	40	61	1951	42.7	11:00p	26	11	1954	17	0	0.03	25.7	56	5:00p	N
7	42.8	33	43.5	12:00p	40	58	1951	41.6	11:00p	25	7	1950	22.5	0	0	9.1	35	1:00a	N
8	44.5	33	46.2	3:00p	39	60	1991	41.7	1:00a	25	2	1977	21	0	0.01	15.5	43	11:00a	NW
9	44.7	32	47.6	12:00m	39	62	1991	42.6	11:00a	24	3	1989	19.9	0	0	11.4	33	2:00p	SSW
10	51	32	57.5	5:00p	38	64	1971	45.8	8:00a	24	4	1978	13.4	0	0	5.2	23	2:00p	SSE
11	49.1	31	57.6	3:00a	38	63	1949	38.9	12:00m	24	3	1978	16.8	0	0.2	17.3	42	8:00p	S
12	35.5	31	39	1:00a	37	62	1949	33.7	12:00m	23	-4	1958	28.6	0	0	18.5	38	1:00a	WNW
13	32.9	30	34.1	5:00a	37	65	1975	31.7	6:00p	23	-4	1958	32.1	0	0	20.9	39	9:00a	NW
14	32.3	30	33	1:00a	37	65	1975	31.6	5:00a	23	3	1958	32.7	0	0	15.4	38	4:00a	WNW
15	30.6	30	32.6	1:00a	36	62	1971	28.3	6:00a	22	-5	1989	34.6	0	0	6.4	23	1:00a	S
16	31.5	29	35.2	11:00p	36	64	1984	29.3	5:00a	22	-6	1989	32.8	0	0	6.6	26	11:00p	S
17	26.6	29	35	1:00a	35	59	1984	21.7	10:00p	21	-8	1989	36.7	0	0	25.2	55	8:00p	WNW
18	22.6	28	24.4	12:00m	35	53	1957	20.6	10:00a	21	-2	1989	42.5	0	0	26.3	52	6:00a	W
19	26.2	28	31.9	4:00p	34	55	1957	19.4	5:00a	21	0	1983	39.3	0	0	18.4	53	8:00p	WNW
20	28.4	28	29.6	4:00p	34	58	1949	26.8	12:00m	20	-5	1983	36.8	0	0	26.7	48	3:00p	WNW
21	28.6	27	32.8	4:00p	33	60	1949	25.9	3:00a	20	-3	1989	35.7	0	0	7.9	35	1:00a	S
22	40.8	27	51.3	12:00m	33	58	1957	30.2	1:00a	19	-4	1989	24.3	0	0.1	8.8	27	9:00a	S
23	50.1	26	51.5	1:00a	33	57	1982	48.6	9:00a	19	-15	1989	15	0	0.9	5.4	24	2:00a	S
24	41.5	26	50	2:00a	32	58	1982	33	10:00p	19	-7	1989	23.5	0	0.63	25.3	60	1:00p	WSW
25	30.8	26	33	1:00a	32	66	1982	28.7	12:00m	18	-5	1983	34.2	0	0	16.3	45	1:00a	W
26	30.3	25	32.5	12:00m	31	58	1982	28	4:00a	18	-2	1983	34.8	0	0	1.5	10	1:00a	SSE
27	31.6	25	33.9	7:00a	31	56	1959	28.1	8:00p	18	-2	1990	34	0	0	12	38	1:00p	NW
28	28.4	24	32.2	12:00m	30	65	1984	25.1	12:00p	17	1	1950	36.3	0	0	5.8	22	5:00a	S
29	40.7	24	51.7	12:00m	30	64	1984	32.1	1:00a	17	-2	1961	23.1	0	0.01	8.2	31	8:00p	SSE
30	45.8	24	52.4	4:00a	29	58	1965	36.8	12:00m	16	-7	1983	20.4	0	0	13.8	32	12:00m	N
AVE	38.4	29.5											26.5	0.0	0.1	13.5	36.2		S
MAX	53.8	35	60.4			69		49.9		27	11		42.5	0	0.90	26.7	60.0		
MIN	22.6	24	24.4					19.4		16	-15		10.3	0	0	1.5	10		
TOTAL															1.89				

Max Rain: 0.9 ON 11/23/14
 Days of Rain: 5 (>.01 in) 3 (>.1 in) 0 (>1 in)