CITY OF ST. JOSEPH WATER FILTRATION PLANT

OPERATIONAL REPORT

APRIL 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-APRIL 2014

Water demand in April was up 11,320,000 gallons from last year which represents a 12.5% increase. This year 99,359,878 gallons were delivered which compares to 88,039,671 gallons delivered in April of 2013. The increase is largely due to two factors. On April 9th, the leak on Botham and Thayer was repaired. As you may recall from last month's report this leak had gone undiscovered since it had been flowing into a storm drain underground. From the time leak was repaired flows dropped dramatically some 500,000 gallons per day. Secondly, the higher demand this year in April was probably due to the fact that rainfall was considerably less than last year. The 2014 April pumpage ranked 25th in the 30 year tabulation dating back to 1985.

GENERAL ACTIVITIES

Water Plant Security

Now that the security gates and perimeter fence are complete attention has turned to the installation of security cameras and access control for the water plant.

As you may recall in 2012 we invited area law enforcement and Homeland Security to the water plant to tour the facility and provide recommendations for security enhancements. From these recommendations plant staff and WSJOB developed plans and allocated funds. To date, $35,000 has been spent on the security gates and the perimeter fence which are not complete. In addition, $50,000 was set aside in the 2013/2014 budget for the installation of security cameras and access control.

In 2013, Mr. Lewis appointed a committee to review security at City Hall and all other facilities. The committee determined that the most cost effective approach was to upgrade the existing Simplex Grinnell system at City Hall and integrate it with a new security at the water plant with the server being located at City Hall. Plant staff met with James Corson of Simplex Grinnell at the water plant on March 10th. Mr. Corson provided a proposal to furnish and install cameras and readers and expressed confidence that the system could by installed by June 30th.

I also spoke with the Saginaw Water Plant Superintendent at the Borchardt Conference in February regarding security upgrades there which he will present at the Annual AWWA conference in Boston in June. Mr. Rheinsch invited us to tour his facility in Saginaw to learn from what they have done there.

Strategic Capital Improvement Plan

Plant staff met with Tony Myers of CH2M Hill at the water plant on April 30th for the On-site Facility Review and Assessment phase of the SCIP. Staff completed an Asset Hierarchy that was forwarded to Hill and will be discussed and further developed in phone conference meeting on May 12th. The asset hierarchy is part of an extensive database developed by Hill that will include asset rankings based on a number of criteria such as regulatory compliance, consequence of failure and water quality. The anticipated completion is in October.

MDEQ Sanitary Survey-City of St. Joseph WSSN#6310

Gary Wozniak, MDEQ District Engineer completed the 2013 Sanitary Survey which was forwarded to City staff for review. This is a time consuming but vital task for Mr. Wozniak and we thank him for his effort and dedication.

The primary purpose of a sanitary survey is to evaluate and document the capabilities of the water system's sources, treatment, storage, distribution network, operation and maintenance, and overall management to continually provide safe drinking water and to provide a safe reliable water supply. In addition, sanitary surveys also aid in the process of evaluating a public water system's progress in complying with federal and state regulations which require the improvement of the capabilities of the system to provide safe drinking water. Sanitary surveys provide the water system with technical and management information regarding the operation of the system from the water source, through the water plant and the distribution system. The MDEQ conducts sanitary surveys every three years.

Fairplain Acceptance

Wightman has furnished a proposal for engineering services to complete a hydraulic study. The hydraulic study or system modeling was initially commissioned in order to determine the need for one or more interconnects with the City of Benton Harbor and Benton Charter Township. The Wightman quote includes the interconnect with Lake Township. There are three interconnects with Benton Township and one interconnect with Benton Harbor. The agreement calls for only one interconnect in Fairplain. Recently, plant staff met with the Benton Harbor Water Plant Superintendent who expressed their interest in preserving the interconnect on Empire. He assured us that a meter could be installed in the pit and that Benton Harbor would be willing to pay for it. Staff will meet with Wightman to review the quote prior to the May WSJOB regular meeting.

Benton Harbor Emergency Interconnect

Work is currently underway on the rehabilitation of the M63 Interconnect. Staff has ordered replacement bolts for all of the pipe flanges and valve housings located inside of the vault. Air Therm is replacing the bolts by cutting out the old ones with a welder and installing new. Staff is looking into the replacement of the roof slab and reinforcement of the walls. The City of Benton Harbor has expressed interest in contributing to this effort.

In addition, the Cities of St. Joseph and Benton Harbor are working together to draft an emergency interconnect agreement. The City Managers and Mr. Alimenti met on May 6th to review the draft document.

Sedimentation Basins

The sedimentation basins were inspected by Dixon Engineering in November. For the first time we saw evidence of leaks in the top of the basins. There is one transverse crack in the West chamber and approximately four to five closely placed cracks in the East chamber. Melting snow during the inspection provided excellent conditions to bring about and reveal the leakage. Staff is currently looking at mapping the locations of the leaks and procuring a firm to excavate the 18" of topsoil by hand shovel and sealing the cracks from above once this season's deep frost melts. The sedimentation basins are underground under the grassy area adjacent to the back parking lot. They were part of the treatment train for the 1931 plant and currently are used to provide contact time for chlorine.

The plant can be operated without the sedimentation basins since sufficient contact time is provided by the clarifiers, filters and reservoir. Concern remains however that the buffering capacity of the basins during thermal upsets in the clarifiers would be lost. In addition, filters 1-4 will have to be isolated from the sedimentation basins if they are to remain dry. These filters account for 4 MGD of the plant's total 16 MGD capacity. Staff will block off the filter/sedimentation gates to enable the use of filters 1-4 which will be needed for peak summer demand.

This can be done by installing 2x12's in the existing sluice gates located under the museum room. In consultation with Dixon we have learned that if extensive cracking is found a membrane would have to be installed. Ira Gabin, Vice President of Dixon has estimated the cost of a membrane to be $45,000. B&Z provided a quote for the removal and replacement of topsoil. Staff is currently seeking other competitive quotes for this work.

UCMR III Monitoring

Plant staff is now collecting samples for both the City and Authority under the Unregulated Contaminant Monitoring Rule. EPA is funding the City monitoring costs since it is a community water supply serving a population under 10,000. The monitoring period is one year.

Ice Cover and Raw Water

The ice cover this year over the water plant intake has presented some challenges in so far as raw water quality is concerned. The incoming lake water has been difficult to treat. I believe this is due to the reduced water movement under the ice. In the absence of the effects of wind, the currents are much lower in intensity. Given this condition, the influence of the St. Joseph River is much greater and as the condition persists the proportion of river water steadily increases until a subtle change in current occurs. River water is higher in alkalinity, dissolved solids, and organics. Fortunately, finished water quality remained high thanks to plant staff and a well maintained and designed plant.

Hilltop Booster Station Pump #2

Plant staff reported vibration and the loss of adjustment shims in the base on pump #2. As you may recall this pump and motor combination has presented problems in the past. Peerless Midwest was called in to evaluate the system and make a recommendation as to the proper resolution of the problem. Their team performed vibration analysis on the pump and motor while connected and the motor alone while disconnected and found that the motor exhibited excessive vibration. This motor was rebuilt in July of 2012 by Kerr Pump after a vibration problem was found at that time. The possibility of piping misalignment was checked as well by the removal and reinsertion of all of the pipe/pump flange bolts. No problem was found. Pump #1 was realigned by Peerless while on site. Peerless spent an inordinate amount of time and effort to align this pump and motor.

The conclusion that we have drawn at this point and this is based on what Mark Thornton had theorized at the onset is that the rolled steel motor housing of the Baldor motor is inadequate and cannot withstand the forces of pump torque. Staff recommended the replacement of the motor on Pump #2 with a U.S. Motor equipped with an integral cast iron housing identical to Pump #1 at Cleveland Booster Station which had been replaced two years ago. The motor on #1 at Hilltop would be replaced at a later date. The new motor was ordered and should be installed by mid-May.

Authority Booster Station Meter Calibration

A service technician from Hesco of Warren, MI calibrated both the Cleveland and Hilltop flow meters. He found that both meters were within specifications. He instructed staff on the operation of the meter, particularly the reverse flow function which was of interest due to the recent Authority water loss study done by Oscar Loveless of Wightman. We learned that the meter was capable of recording reverse flow and that it had in fact logged 12.0 MG in reverse flow since installation in 2008. This could have accounted for some of the elevated water loss in the Authority particularly during the summer of 2013 when the check valve failures were discovered at Cleveland Booster Station. Of note, the service technician confirmed that the meters had been improperly wired during installation.

Plant staff had discovered the problem in March. The technician found that the power wires were passing over the internal circuit board which was causing a momentary short circuit whenever the meter housing was handled. Nonetheless, the tech assured us that the meter readings were unaffected and that the meter had been reading accurately in both the forward and reverse flow directions.

Stage 2 D/DBP Monitoring Results-Authority

The Stage 2 DBP rule is one part of the Microbial and Disinfection Byproducts Rules (MDBPs), which are a set of interrelated regulations that address risks from microbial pathogens and disinfectants/disinfection byproducts. The stage 2 DBP rule focuses on public health protection by limiting exposure to DBP's, specifically total trihalomethanes (TTHM) and five haloacetic acids (HAA5) which can form in water through disinfectants used to control microbial pathogens. The St. Joseph Water Plant utilizes chlorine as a disinfectant.

In April the HAA5 level recorded was elevated at 72 ppb. This was likely due to high organics from Spring runoff and the lack of mixing in the lake given the unusually long ice cover. Community water supplies cannot exceed 60 ppb as a running annual average. Given the seasonal nature of HAA5, production, we expect the running annual average to remain well below the limit. The HAA5 running annual average is now 38 ppb. The last time the system recorded elevated HAA5 numbers was in April of 2008 in the City. In June of that year levels returned to normal.

Benton Township F-2 Coverage/Joint Sharing of Water Plant Superintendent

The warranty replacement of the membrane filter modules is now complete. Back in April of 2013, modules began failing at the potted ends of the cylinders. In November an additional 24 modules were found to have cracked pots. Staff began replacing the modules under the provisions of a prorated warranty. On December 13th we received word that Siemens would replace all of the remaining modules at no cost to the Township.

We expect the need for our management assistance to the Township to come to an end once test results are received for Township water plant staff who took the F-2 examination on May 1st. In addition, a licensed F-1 shift operator was hired to fill a vacancy at the plant who could cover the requirement if staff did not pass the exam.

Monthly Maintenance Notes

April 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
3/27 to 4/10/14	Wolverine Insulating - Insulated Drain & Boiler Lines in 9-12 Filter Room
04/07/14	Repaired Circulation Pump on Chlorinator at the Cleveland BPS. Installed New Wet End on Pump, Housing, Face Plate and Impeller.
4/7 to 4/10/14	Cox Painting - Painted walls and ceiling in clarifier 2 & 3 room stairwell
04/14/14	Cummins Bridgeway - PM Inspection and service on Hilltop and Cleveland BPS Generators
4/10 to 4/16/14	Mead & White - Installed New Light Fixtures in 5-8 filter galley
04/21/14	Installed New Battery Backups in North Low Service Control Panel and High Service Control Panel
04/22/14	Hesco - Calibrated and Serviced Flow/Totalizer Meters at Cleveland and Hilltop BPS.
04/23/14	Installed New Fans in 1958 Hallway
04/28/14	Installed New Smoke Detectors @ Cleveland and Hilltop BPS.
04/29/14	Hach - Quarterly Service and Calibration on TOC and all Filter Turbidimeters
04/29/14	Installed new screens on clarifier 2 & 3 Inlet vents for summer

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

APRIL 2014

By: Greg Alimenti

St. Joseph Water Plant

700 Broad St.

Saint Joseph, MI. 49085-1276

(269) 983-1240

DISTRIBUTION:	
Total Gallons	99,359,878
Average Day	3,311,996
Maximum Day	4,349,621
Minimum Day	2,672,815

TREATMENT:	
Total Low Service	102,653,045
Wash Water Gals.	2,018,882
Wash Water %	1.93%
Plant Use Gals.	1,490,244
Plant Use %	1.48%

FILTRATION:		
Ave. Filter Run	102.3	hours
Ave. Filter Rate	1.45	g/sqft/min
Filter Eff. Index	494.4	
Ave. Loss of Head	1.0	feet
Plant Sewer Useage		

LABRATORY REPORT		
Average of	Raw	Tap
Chlorides mg/L	19.8	19.7
Fluoride mg/L	0.16	0.98
Alkalinity mg/L	122	107
Hardness mg/L	153	151
pH	7.8	7.1
Calcium mg/L	42	42
Magnesium mg/L	11	11
Turbidity NTU	2.23	0.04
Temperature `F	43	
Total Coliform		0.0
Chlorine Residual		mg/L Free
Mixing Basin		1.50
Applied		1.65
Tap		1.46
Distribution		1.00

TREATMENT CHEMICAL SUMMARY:

	Applied mg/L	Total Lbs.	Cost	Inventory lbs.	Days Supply
		CHEMICAL			
Alum (Al^{+3})	2.00	1,741	$5,065.94	6,339	109
Chlorine (Cl_2)	3.16	2,721	$707.46	6,550	72
Fluoride (F_2)	0.73	627	$1,879.86		

Total Cost all Chemicals	$7,653.26
Chemical Cost per Mil. Gallon Treated	$74.55
Chemical Cost per Mil. Gallon Delivered	

PLANT UTILITIES SUMMARY

Electric:	
Total KWH	5,440
Total Power Cost	$426.06
Power Cost per Million Gallon Treated	$139.95
Power Cost per Million Gallon Delivered	$0.00
Gallons Pumped per KWH	18265
Natural Gas:	
Metered Cubic Feet	0
Natural Gas Cost	-
Emergency Power Diesel Fuel Inv., Gals.	

REMARKS:

***includes measure of melted snow

visit the City of Saint Joseph's Home page at www.sjcity.com

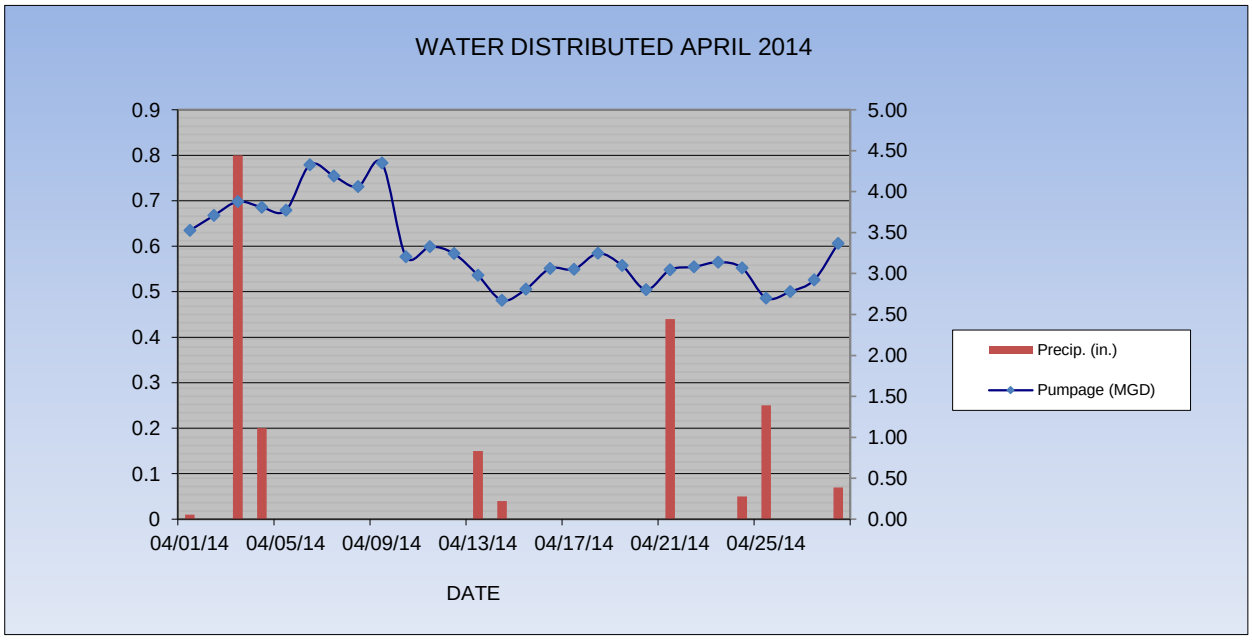
e-mail comments to either: operator@sjcity.com or alimenti@sjcity.com

WEATHER CONDITIONS AT THE PLANT		Air Temp. 'F		
SJWW Weather Computer		Avg.	46.7	
Rain Guage, Inches	2.12	Max.	72.8	
days it rained***	11	Min.	30	
Wind Speed, Avg	7.6	Lake Temp.'F		
Wind Speed, Max	45	Avg.	42.6	
Prevailing Wind Dir.	NNE	Max	48.5	
Lake Level (USACE)	577.43	Min	32.9	

ST JOSEPH WATER PLANT PUMPAGE-WATER DELIVERED/RAINFALL
APRIL 2014

				Day to Day Comparison 2014/2013	
DATE	PUMPAGE (gallons)	PUMPAGE (MGD)	Rainfall (in)	2014	2013
04/01/14	3,525,665	*3.53*	0.01	3,525,665	2,778,681
04/02/14	3,707,780	*3.71*	0	3,707,780	3,695,486
04/03/14	3,878,622	*3.88*	0.8	3,878,622	2,742,956
04/04/14	3,809,051	*3.81*	0.2	3,809,051	2,904,603
04/05/14	3,770,608	*3.77*	0	3,770,608	2,458,231
04/06/14	4,327,571	*4.33*	0	4,327,571	2,820,580
04/07/14	4,190,391	*4.19*	0	4,190,391	2,923,013
04/08/14	4,062,185	*4.06*	0	4,062,185	3,276,621
04/09/14	4,349,621	*4.35*	0	4,349,621	2,542,351
04/10/14	3,204,579	*3.20*	0	3,204,579	2,801,524
04/11/14	3,328,475	*3.33*	0	3,328,475	2,759,278
04/12/14	3,243,180	*3.24*	0	3,243,180	2,849,977
04/13/14	2,978,533	*2.98*	0.15	2,978,533	2,705,747
04/14/14	2,672,815	*2.67*	0.04	2,672,815	2,774,076
04/15/14	2,808,819	*2.81*	0	2,808,819	3,140,015
04/16/14	3,061,026	*3.06*	0	3,061,026	2,827,811
04/17/14	3,051,650	*3.05*	0	3,051,650	2,670,783
04/18/14	3,246,806	*3.25*	0	3,246,806	2,850,502
04/19/14	3,098,371	*3.10*	0	3,098,371	2,957,987
04/20/14	2,803,263	*2.80*	0	2,803,263	2,602,643
04/21/14	3,045,881	*3.05*	0.44	3,045,881	3,181,488
04/22/14	3,080,880	*3.08*	0	3,080,880	3,129,176
04/23/14	3,138,997	*3.14*	0	3,138,997	2,934,352
04/24/14	3,067,571	*3.07*	0.05	3,067,571	2,737,599
04/25/14	2,700,835	*2.70*	0.25	2,700,835	2,972,655
04/26/14	2,778,085	*2.78*	0	2,778,085	2,947,964
04/27/14	2,921,993	*2.92*	0	2,921,993	3,023,057
04/28/14	3,368,214	*3.37*	0.07	3,368,214	3,291,845
04/29/14	2,928,775	*2.93*	0.1	2,928,775	3,348,423
04/30/14	3,209,637	*3.21*	0.01	3,209,637	3,390,245
TOTAL	99,359,878	93.22	2.12	99,359,878	88,039,669

Average Day	**3,329,338**
Maximum Day	**4,349,621**
Minimum Day	**2,672,815**

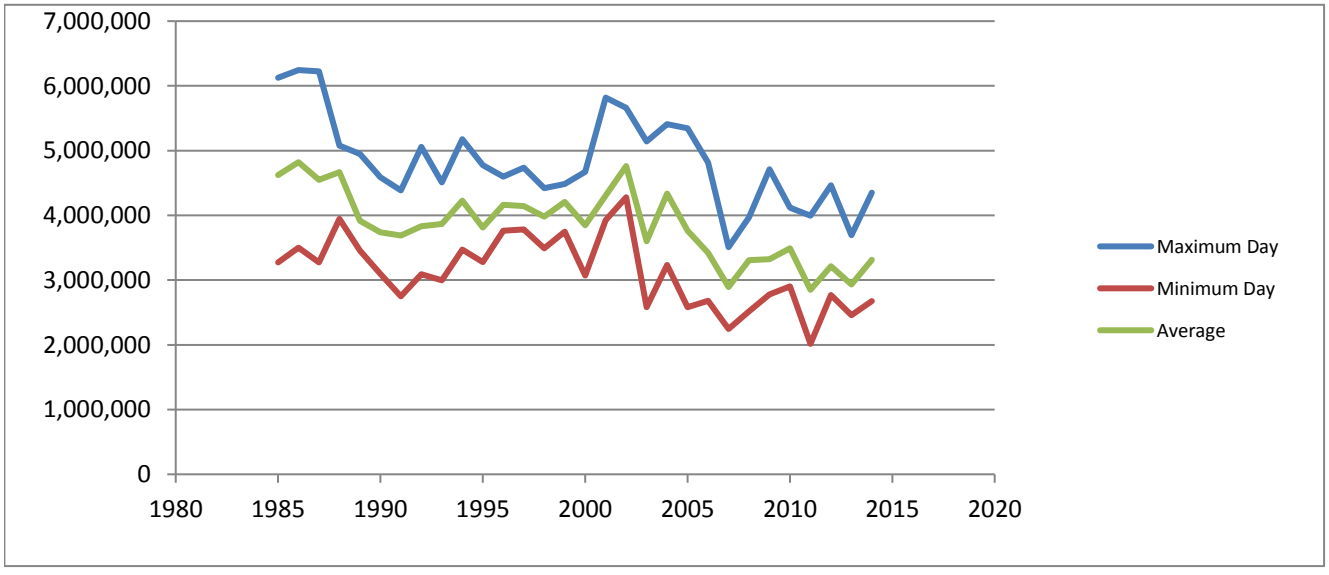


ST JOSEPH WATER PLANT PUMPAGE-WATER DELIVERED

APRIL 2014

Year	Average	Maximum Day	Minimum Day	Monthly Total
1985	4,623,537	6,126,900	3,271,900	138,706,100
1986	4,820,910	6,244,100	3,499,400	144,627,300
1987	4,546,330	6,224,600	3,270,800	136,389,900
1988	4,668,567	5,078,400	3,946,400	140,057,000
1989	3,916,507	4,946,600	3,457,900	117,495,200
1990	3,736,903	4,586,800	3,093,000	112,107,100
1991	3,688,830	4,384,400	2,751,300	110,664,900
1992	3,830,540	5,058,100	3,092,500	114,916,200
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

Rank	Year	Monthly Total
1	1986	144,627,300
2	2002	142,814,950
3	1988	140,057,000
4	1985	138,706,100
5	1987	136,389,900
6	2004	130,085,740
7	2001	129,250,950
8	1994	126,801,500
9	1999	126,266,100
10	1996	124,823,000
11	1997	124,291,400
12	1998	119,465,300
13	1989	117,495,200
14	1993	116,017,700
15	2000	115,400,450
16	1992	114,916,200
17	1995	114,394,500
18	2005	112,848,390
19	1990	112,107,100
20	1991	110,664,900
21	2003	107,952,820
22	2010	104,708,365
23	2006	102,656,500
24	2009	99,650,580
25	**2014**	**99,359,878**
26	2008	99,195,850
27	2012	96,385,121
28	2013	88,039,671
29	2007	86,848,410
30	2011	85,499,000



WSSN 3726 **April 2014**

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-Apr	0.000	0	0.00	0.00	1.64	1.65	1.75		1.753	43	6.10	0.42	2.31	1.87	2.12	1.753
2-Apr	0.000	0	0.00	0.00	1.43	1.43	1.47		1.813	23	3.26	0.22	1.47	1.83	2.00	1.813
3-Apr	1.698	68	9.64	0.68	1.41	1.43	1.41		0.000	0	0.00	0.00	1.71	1.68	1.88	1.698
4-Apr	0.000	0	0.00	0.00	1.35	1.35	1.37		2.153	59	8.37	0.47	2.14	1.67	1.81	2.153
5-Apr	1.763	62	8.79	0.60					0.000	0	0.00	0.00				1.763
6-Apr	1.763	62	8.79	0.60					0.000	0	0.00	0.00				1.763
7-Apr	1.763	62	8.79	0.60	1.43	1.34	1.46		0.000	0	0.00	0.00	1.09	1.27	1.12	1.763
8-Apr	0.000	0	0.00	0.00	1.27	1.25	1.30		1.970	34	4.82	0.29	2.01	1.64	1.75	1.970
9-Apr	1.096	37	5.25	0.57					1.240	14	1.98	0.19				2.336
10-Apr	1.096	37	5.25	0.57	1.49	1.37	1.45		1.240	14	1.98	0.19	1.32	1.49	1.55	2.336
11-Apr	1.307	41	5.81	0.53	1.61	1.50	1.54		0.066	0	0.00	0.00	1.31	1.35	1.20	1.374
12-Apr	0.630	15	2.13	0.40					1.423	29	4.11	0.35				2.054
13-Apr	0.630	15	2.13	0.40					1.423	29	4.11	0.35				2.054
14-Apr	0.630	15	2.13	0.40	1.65	1.38	1.57		1.423	29	4.11	0.35	2.04	1.47	1.59	2.054
15-Apr	1.940	10	1.42	0.09	1.32	1.36	1.36		0.000	0	0.00	0.00	2.11	1.47	1.65	1.940
16-Apr	1.962	49	6.95	0.42	1.87	1.32	1.34		0.000	0	0.00	0.00	1.62	1.48	1.43	1.962
17-Apr	2.004	36	5.10	0.31	1.74	1.35	1.37		0.000	0	0.00	0.00	1.29	1.35	1.31	2.004
18-Apr	2.054	26	3.69	0.22					0.083	1	0.14	0.21				2.137
19-Apr	2.054	26	3.69	0.22					0.083	1	0.14	0.21				2.137
20-Apr	2.054	26	3.69	0.22					0.083	1	0.14	0.21				2.137
21-Apr	2.054	26	3.69	0.22	1.32	1.35	1.36		0.083	1	0.14	0.21	2.19	1.23	1.28	2.137
22-Apr	2.068	23	3.26	0.19	1.20	1.49	1.54		0.043	0	0.00	0.00	1.27	1.51	1.56	2.112
23-Apr	1.782	60	8.51	0.57	1.71	1.53	1.59		0.354	8	1.13	0.38	2.06	1.49	1.58	2.136
24-Apr	0.000	0	0.00	0.00	1.41	1.44	1.44		1.948	54	7.66	0.47	2.11	1.58	1.64	1.948
25-Apr	1.876	23	3.26	0.21	1.41	1.43	1.47		0.000	0	0.00	0.00	2.09	1.40	1.42	1.876
26-Apr	0.362	5	0.71	0.24					1.684	22	3.12	0.22				2.045
27-Apr	0.362	5	0.71	0.24					1.684	22	3.12	0.22				2.045
28-Apr	0.362	5	0.71	0.24	1.40	1.27	1.22		1.684	22	3.12	0.22	1.83	1.28	1.34	2.045
29-Apr	2.037	45	6.38	0.38	1.99	1.44	1.46		0.000	0	0.00	0.00	1.33	1.13	1.16	2.037
30-Apr	1.935	27	3.83	0.24	1.72	1.36	1.33		0.000	0	0.00	0.00	1.12	1.05	1.10	1.935
TOTAL	37.282	806	114.3						22.233	406	57.6					59.515
AVE DAY	1.243		3.8	0.31	1.52	1.40	1.44		0.7411		1.9	0.17	1.72	1.46	1.52	1.984
MAX	2.068		9.6	0.68	1.99	1.65	1.75		2.1530		8.4	0.47	2.31	1.87	2.12	2.336
MIN	0.000		0	0.00	1.2	1.25	1.22		0.0000		0	0.00	1.09	1.05	1.1	1.374
MONTHLY TOTALS:		Cleveland	Total MG	37.282						Hilltop	Total MG	22.233	Cleveland Pump Station:			37.282
			Treated	37.282	SJCT-East		6.007				Treated	22.190	Hilltop Pump Station:			22.19
Total Authority Flow:		59.540	Untreated	0.000	SJCTE AVE DAY		0.200				Untreated	0.043	TOTAL AUTHORITY (Trted.)			59.472

STAGE 2 D/DBPR MONITORING-HALOACETIC ACIDS

April 2014

WSSN 3726

Date	10/10/13	10/10/13
Site	Lincoln Twp Hall	Dane
Dibromoacetic acid	1.1	<!
Dichloroacetic acid	20	6.8
Monobromoacetic acid	<1	<1
Monochloroacetic acid	<2	<2
Trichloroacetic acid	17	19
Total HAA5	*38.1*	*25.8*

Date	01/15/14	01/15/14
Site	Lincoln Twp Hall	Dane
Dibromoacetic acid	1.1	1
Dichloroacetic acid	9.6	12
Monobromoacetic acid	<1	<1
Monochloroacetic acid	<2	<2
Trichloroacetic acid	12	17
Total HAA5	*22.7*	*30.0*

Date	04/10/14	04/10/14
Site	Lincoln Twp Hall	Dane
Dibromoacetic acid	<1	<1
Dichloroacetic acid	25	22
Monobromoacetic acid	<1	<1
Monochloroacetic acid	5	5.1
Trichloroacetic acid	42	31
Total HAA5	*72*	*58.1*

RAA	**44.3**	**38.0**	**ppb**

DISTRIBUTION REPORT ***For the Month of April 2014***

Activity	Number	Description
Water Main Breaks	6	
Frozen Services	0	
MISS DIGS	485	
Delinquent Shut Off	17	LCT
Hydrants (Repaired/Replaced)	0	
Valves	0	
Taps (1")	5	4814 Lauren Lane (RCT), 4376 Tanglewood Trail (RCT)
		4401 Stewart Way (LCT), 1174 Forest Brook Drive (LCT)
		2345 Rocky Weed Road (LCT)
Service Work	0	
Water Service Repairs	1	6540 Fredonia Circle (Replace service-leaking under road)
Repair of Curb box/Shut-Off Valves	0	
Water Quality Complaint(s)	0	
Hydrant Flushing to maintain water quality	0	
Staff Education/Training	0	
Overtime-Total	121.5	
Turn Off	12	(Note: This number does not include delinquent Shut off)
Turn On	14	
Finals	98	
Meter Repair		
Meter Repair/Replacement	44	Verify Read
Per detail		New Installation 6
Meter leaking		New Installation-Benton Harbor 3
Stopped Meter		Replaced/various reasons
Faulty Register		Rockwell Replacement
Frozen Meter		Mxu Replaced
Move Meter Inside		Sprinkler meter removed/line capped
Hard to read		Removals 1
Replace/Adding Sprinkler Meter		Curb box location
Damage to Trt		Broken Remote
New Plumbing		Noisy Meter
New siding		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: April 2014

#	Date	Location	Main Size	Gallons Lost	Break Type	Valves Turned	City Twp	Labor	Remarks
1	4/9/2014	Botham & Thayer	6	5,000,000	Large hole	4	City		At intersection. Undiscovered flowing into storm sewer underground
2	4/10/2014	Veronica & West Highland	6	10,000	MJ at 6" T	3	City		6" Mechanical Joint at T.
3	4/11/204	316 North Veronica Ct.	6	400,000	Hole	2	City		May have begun in Dec. Undiscovered flowing into ravine.
4	4/12/2014	Hilltop Rd & S. State	10	5,000	Repair band	2	SJCT		S.S repair band corroded through and failed.
5	4/14/2014	St. Joseph Dr/Division	6	1,000	WM bolt failure	3	City		Bad water main bolts
6	4/23/2014	1111 Napier Avenue	6	1,000	Circumferential	3	City		Slow leak may have been leaking extended period of time. 2 gal/hour
		Total Gallons Lost		5,417,000					

MONTHLY CLIMATOLOGICAL SUMMARY **APRIL** **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	42.9	43	**58.7**	1:00a	53	83	1986	36	**12:00p**	33	17	1984	17.6	0	**0.01**	**13**	**41**	1:00p	WSW
2	37.8	44	**42.3**	12:00m	53	79	1963	**35.9**	7:00p	33	20	1992	25.9	0	**0**	**5.7**	**20**	3:00p	NNE
3	41.4	44	**44.4**	3:00a	54	80	1956	**37.8**	11:00a	33	18	1954	23.9	0	**0.8**	**5.3**	**28**	8:00a	E
4	39.1	45	**46.3**	9:00a	54	75	1956	**35.4**	12:00m	34	15	1993	24.1	0	**0.2**	**15.1**	**43**	12:00m	WSW
5	37.6	45	**40.7**	8:00p	55	82	1988	**34.9**	2:00a	34	18	1982	27.2	0	**0**	**7.8**	**36**	2:00a	NW
6	42.4	45	**46**	11:00a	55	82	1988	**36.8**	7:00a	34	14	1982	23.6	0	**0**	**4.1**	**14**	7:00a	SSE
7	42.9	46	**48**	12:00p	55	78	1991	**39.6**	12:00m	35	9	1982	21.2	0	**0**	**3.6**	**15**	12:00p	NNE
8	40.6	46	**43.8**	5:00p	56	77	1991	**39**	2:00a	35	15	1972	23.6	0	**0**	**4.6**	**13**	7:00a	WSW
9	45.4	46	**55**	11:00p	56	74	1967	**38**	9:00a	35	15	1985	18.5	0	**0**	**4.6**	**25**	11:00p	SW
10	51.6	47	**55.7**	10:00a	57	80	1977	**48.4**	4:00p	36	15	1997	12.9	0	**0**	**7.4**	**28**	9:00a	SW
11	50.6	47	**56.4**	8:00p	57	79	1977	**46.7**	7:00a	36	18	1952	13.4	0	**0**	**2.5**	**20**	2:00a	SSE
12	61	47	**72.8**	6:00p	57	82	1971	**50**	5:00a	36	21	1982	3.6	0	**0**	**7.4**	**38**	6:00p	S
13	59.5	48	**66.8**	1:00a	58	77	1960	**47.9**	12:00p	36	18	1950	7.6	0	**0.15**	**7.7**	**30**	8:00a	S
14	43.5	48	**66.5**	1:00a	58	79	1976	**31.3**	12:00m	37	21	1982	16.1	0	**0.04**	**23.1**	**45**	6:00p	N
15	32	48	**34.2**	7:00p	59	83	1976	**30**	9:00a	37	16	1957	32.9	0	**0**	**13.7**	**38**	8:00a	N
16	40.1	49	**48.9**	5:00p	59	86	1976	**31.2**	7:00a	37	24	1990	24.9	0	**0**	**4.8**	**21**	10:00p	SSE
17	47.5	49	**52.3**	5:00p	59	84	1976	**40.5**	7:00a	38	25	1949	18.6	0	**0**	**4.5**	**21**	9:00a	SW
18	43.4	49	**50.1**	1:00a	60	86	2002	**39.4**	9:00p	38	19	1990	20.3	0	**0**	**7.6**	**24**	5:00p	NNE
19	47.8	50	**60.6**	4:00p	60	84	1985	**39.4**	7:00a	38	18	1988	15	0	**0**	**3.8**	**17**	8:00a	SSE
20	55.2	50	**61.9**	11:00p	60	84	1985	**46.8**	7:00a	39	22	1951	10.6	0	**0**	**3.3**	**18**	9:00a	SSE
21	59.3	50	**65.1**	10:00a	61	86	1985	**52.3**	12:00m	39	23	1953	6.3	0	**0.44**	**7.4**	**24**	7:00p	SW
22	43.6	51	**52.4**	1:00a	61	86	1985	**41.4**	12:00m	39	21	1993	18.1	0	**0**	**15.9**	**41**	4:00a	N
23	39.7	51	**43.3**	12:00m	62	85	1980	**37.1**	7:00a	39	18	1986	24.8	0	**0**	**11**	**30**	3:00a	NNE
24	51.6	51	**58.2**	5:00p	62	85	1990	**43.2**	1:00a	40	28	1999	14.3	0	**0.05**	**4.2**	**23**	8:00p	SE
25	50.5	52	**56.9**	8:00p	62	86	1990	**43.4**	10:00a	40	25	1949	14.8	0	**0.25**	**5.2**	**23**	10:00a	NW
26	43.5	52	**52.4**	1:00a	63	88	1986	**40.4**	8:00p	40	24	1997	18.6	0	**0**	**10**	**27**	7:00a	NNE
27	51.4	52	**60.1**	5:00p	63	87	1994	**44.1**	8:00a	41	27	1988	12.9	0	**0**	**6.3**	**28**	11:00a	E
28	53.7	53	**59**	3:00p	64	85	1990	**50.1**	10:00a	41	24	1992	10.5	0	**0.07**	**7.6**	**31**	11:00a	E
29	54.2	53	**65.1**	2:00p	64	82	1970	**50.4**	12:00p	41	27	1979	7.3	0	**0.1**	**4.6**	**31**	3:00p	E
30	51	53	**54.7**	1:00a	64	87	1962	**46.1**	12:00m	42	30	1971	14.6	0	**0.01**	**6.9**	**23**	9:00p	SW
31																			
AVE	**46.7**												**17.5**	**0.0**	**0.1**	**7.6**	**27.2**		NNE
MAX	**61**	**53**	**72.8**			**88**		**52.3**		**42**	**30**		**32.9**	**0**	**0.80**	**23.1**	**45.0**		
MIN	**32**	**43**	**34.2**					**30**		**33**	**9**		**3.6**	**0**	**0**	**2.5**	**13**		
TOTAL															**2.12**				

Max Rain: 0.8 ON 04/03/14
Days of Rain: 9 (>.01 in) 5 (>.1 in) 0 (>1 in)