WOODARD &CURRAN

Monthly Operating Report

January 2018

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So. Sangamon

February 20, 2018

woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

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EXECUTIVE SUMMARY

Safety. Safety is the number one priority at Woodard and Curran. We continue to provide monthly training for operations staff at the plant, provide weekly safety updates and safety videos are assigned to all employees. The safety topic for this month was "Fire Extinguisher Safety". There were no lost time accidents in the month of January 2018. 100 percent of the items identified in the combined list of safety items have been completed.

Compliance. The finished water quality was within regulatory limits and all reporting and sampling requirements were met for the month. A copy of the Operations Report submitted to the Illinois Environmental Protection Agency is available at www.sswc.us.

During the month of January 2018, the plant pumped 38.635 million gallons from the well field and 30.56 million gallons of finished water. For the period of May 2017 through January 2018, the plant has pumped 4,821,997 more gallons of water then during the same period one year ago.

We have an exceedance on the Manganese for the daily limit for the month of January.

The SSWC plant has been placed on Critical Review status. Systems on Critical Review will be evaluated for sufficient capacity before issuance of water main extension permits.

Operations. There was 0 emergency call-outs for the month. There were 2 customer inquiries for the month.

- **Well 1 pump and motor replacement and treatment of the well.** As plant operational staff reported with the December 2017 Monthly Operating Report, Well #1 is out of service. Attachment B includes pictures of the old pump that illustrates the need for replacement as well as the quote for the replacement of the pump and motor as well as the cost for treating the well. The total estimated cost is $31,021. There is a one-year warrant on both the pump and the motor. Would the commission like me to request Layne proceed with this work?

- **Greensand Filter and Pigging Stations Extensions.** The extension for the Greensand Filters and Pigging Stations is due to IEPA. Would you like plant operations staff to contact the Illinois Environmental Protection Agency and request another extension?

Maintenance and Repair. For the month of January 2018, there were 11 inspections, 3 preventative and 1 corrective maintenance activities completed.

Budget. Through January 26, 2018, we are $22,617 under budget for the fiscal year.

Capital Planning. Woodard and Curran is working with Meco Engineering to update and prioritize the Capital Improvement Plan. The CIP is a planning document that includes all projects anticipated to exceed $5,000 in cost over the next five years. The CIP is an ongoing process and will be refined from time to time as projects are completed and new issues are identified.

1. SAFETY

1.1 SAFETY TRAINING

Woodard and Curran continues to provide safety training for personnel at the plant. This is accomplished by requiring daily safety meetings, weekly safety updates are available to the plant, and safety videos are assigned to all employees and are required to be completed. The January 2018 safety training topic was "Cold Stress".

1.2 LOST TIME ACCIDENTS

There were 0 lost time accidents in the month of January 2018.

1.3 SAFETY AUDIT

Since Woodard and Curran assumed operational responsibility for the SSWC plant, two safety audits have been completed. The first audit was conducted in May 2015 and identified 89 items needing to be addressed. Approximately 86 percent of those items identified had been addressed when a second audit occurred in November 2016.

The finding for these two audits were combined to produce a list of 40 items needing to be addressed. As of November 30, 2017, 100 percent of the items have been addressed.

1.4 MISCELLANEOUS SAFETY

There were no Miscellaneous Safety items for the month.

2. COMPLIANCE, FLOWS AND LOADINGS

2.1 COMPLIANCE

The finished water quality was within regulatory limits and all reporting and sampling requirements were met for December. A copy of the Operations Report to the Illinois Environmental Protection Agency (IEPA) is available on the SSWC website.

2.2 INFLUENT FLOWS AND LOADINGS

The total gallons pumped from the well field was 38.635 MG. The influent parameters were all within the normal range.

The influent flow and loadings are summarized below in Table 2.2

Table 2.2 Influent Concentrations and Flow

	pH	Temp	Iron	Manganese	Fluoride	Hardness	Alkalinity	Well Flow Gals (k)
Max.	7.62	14.2	1.46	0.223	-	376	296	1.631
Min.	6.90	12.6	0.53	0.196	-	340	280	0.988
Avg.	7.35	13.4	0.85	0.210	-	359	287	1.246
Total	-	-	-	-	-	-	-	38.635

2.3 EFFLUENT CONCENTRATIONS

The facility filtered 35.368 MG during the month with a daily average of 1.141 MG and a min/max of 1.502/0.897 MG.

Table 2.3 Finished Water Quality

	Free CL2	Total CL2	pH	Temp	Iron	Manganese	Fluoride	Hardness	Alkalinity	Phosphate
Max.	1.5	1.7	7.92	14.6	0.02	0.051	1.06	132	290	1.58
Min.	1.3	1.3	7.44	12.6	0.00	0.007	0.72	104	258	1.05
Avg.	1.3	1.5	7.77	13.4	0.01	0.015	0.88	115	273	1.24
MCL	-	-	-	-	1.00	-	4.00	-	-	-
SMCL	-	-	-	-	0.30	0.050	2.00	-	-	-

Finished Water Flow Comparison for FY 2018

Time Period	2017-2018	2016-2017	2015-2016
May – January	314,544,420	309,722,423	290,046,675
Increase for the same period last year		**4,821,997**	

FINISHED WATER PUMPING HISTORY						
	2017-2018	2016-2017	2015-2016	2014-2015	2013-2014	2012-2013
May	32,301,672	33,248,127	33,376,051	37,669,726	31,157,411	29,592,356
June	39,931,402	**41,541,321**	31,092,539	38,462,951	36,530,691	47,120,577
July	42,164,927	35,378,396	33,123,375	**38,674,894**	40,908,704	**57,780,876**
August	38,760,634	35,401,490	**38,109,033**	33,748,543	**42,999,243**	42,398,528
September	39,896,986	36,325,215	36,546,171	29,763,075	37,597,085	32,510,603
October	33,506,605	34,374,820	34,783,455	28,803,052	33,916,594	30,278,765
November	28,617,333	30,478,309	27,217,293	28,426,579	31,615,459	27,114,479
December	28,808,037	32,525,530	27,788,637	28,656,869	32,697,551	29,014,035
January	30,556,824	30,449,215	28,510,121	30,346,721	32,499,427	28,007,432
February		27,373,232	26,095,228	26,336,077	28,745,378	25,763,807
March		30,068,363	27,851,811	28,729,919	31,217,486	28,130,190
April		29,625,797	29,292,618	29,270,184	31,690,073	27,991,597
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Totals	314,544,420	396,789,815	373,786,332	378,888,590	411,575,102	405,703,245
Average		1,087,095	1,022,702	1,038,051	1,127,603	1,111,516
Maximum		2,061,098	2,177,926	1,837,344	2,010,587	2,546,901
Minimum		275,315	-	349,690	363,767	142,411

2.4 LAGOON DISCHARGE CONCENTRATIONS

The results for the NPDES lagoon discharge permit are summarized below.

Table 2.4 Weekly Grab Sample Analysis Results

Lagoon Effluent Results						
Date	**Fe (mg/l)**	**Mn (mg/l)**	**Chloride (mg/l)**	**Cl^2 (mg/l)**	**pH (S.U.)**	**TSS (mg/l)**
01/24/2018	0.900	1.100	280	0.03	7.84	0
Minimum						
Maximum						
Average						
Monthly Avg Limit	***2.000***	***1.000***				***15***
Daily Limit	***4.000***	***2.000***	***500***	***0.05***	***6.0-9.0***	***30***

The Chloride sample for the month of January 2018, performed by the Springfield Metropolitan Sanitary District, was 16,000 mg/L. The limit for chloride discharge to the sanitary district is 30,000 mg/L.

We have an exceedance on the Manganese for the daily limit for the month of January.

3. OPERATIONS

3.1 EVENTS IMPACTING OPERATIONS

Overflow of the Chatham Tower. On January 2, 2018 at approximately 7:00 am, Plant Operations staff received a call from KAT Trucking. The Water Tower in Chatham overflowed making it impossible unload Chloride waste at the Sangamon County Water Reclamation District permitted location. Currently, SSWC unloads the Chloride waste at the base of the water tower. A call was placed to the Sangamon County Water Reclamation District and they requested the Chloride waste be taken directly the treatment plant on 8th Street.

Pictured below is fenced in area at the base of the tower and the parking lot which was inaccessible for disposal of the Chloride Waste.

Change in Chlorine Feed Rate. On January 3, 2018, Mr. Patrick McCarthy called plant operations staff and requested the Chlorine level be lowered in the water since we are not currently pumping to New Berlin. A few people have indicated the water has a Chlorine smell to it in Chatham. The village of Chatham made a similar request on January 17, 2018 and the Chlorine rate was lowered again.

Broken Water Line on Brine Tank #2. On January 2, 2018, the water line on Brine Tank #2 broke. We are not sure whether the line broke due to temperature or stress on the elbow. Repairs were made on January 3, 2018 by Henson Robinson. This tank was off line at the time of the break and it took place during business hours so there was no disruption in service and only a minor amount of water was lost from the tank.

Sodium Permanganate Line Freeze. On January 2, 2018, the Sodium Permanganate line started to freeze from the extremely cold temperatures on January 1, 2018. Pictured below is a small cover constructed by Plant Operations staff. The line was thawed using a heat gun. We then insulated the conduit and the outside of the box to help protect the line.

3.2 EMERGENCY & SERVICE CALLS

Service Calls:

- On January 12, 2018, we received a warning alarm for the fuel temperature sensor on the plant generator. Cummins Crosspoint was on-site January 16, 2018 to install and new fuel temperature sensor.

3.3 EMERGENCY CALL-OUTS

There was 0 emergency call-out for the month requiring operational personnel at the plant after normal business hours.

3.4 CUSTOMER INQUIRIES

There were 2 customer inquiries for the month of January:

- Stephen Nightingale called regarding Chloride waste hauling practices.
- Mr. Matt Mau called regarding Chlorine levels in the water.

4. MAINTENANCE AND REPAIR

4.1 PREVENTATIVE AND PREDICTIVE MAINTENANCE

For the month of January 2018, there were 11 inspections, 3 preventative and 1 corrective maintenance activity completed.

4.2 CORRECTIVE REPAIRS

- **Rotometer Replacement.** The rotometer on Bank #3, which indicates to plant operations staff the pressure on the membranes, was bent and required replacement. The rotometer was replaced on January 10, 2018 and there was no interruption in service.

OTHER WORK PERFORMED

Damaged Hydrant Repaired. Hydrant #2004 located approximately 0.5 miles east of Lead Line Road was damaged sometime prior to December 9, 2017. Henson Robinson made repairs on January 24, 2018. Pictured below is the hydrant prior to repair.

Illinois State Water Survey. Plant operations staff forwarded information to the Illinois State Water Survey on water pumped from the wells for 2015, 2016 and 2017 as required by law.

Cleaning of Brine Tank #2. On January 10, 2018, Bodine Services was on-site to clean brine tank #2. Below is a picture of the brine tank prior to cleaning.

Below is a picture of the tank once it's been cleaned.

5. PROJECT MANAGEMENT & SUPPORT

5.1 STAFFING & TRAINING

- Woodard and Curran continues to train and provide staffing to the plant as needed.
- Woodard and Curran IT staff are working with plant personnel on Hach Wims. Hach Wims is the computer program utilized by Woodard and Curran for developing IEPA Monthly Operating Reports and storage of test data. We are working through the issues discovered with the reporting last year as time allows.

5.2 CORPORATE SUPPORT

The following individuals, either on-site or remotely, provided assistance in operation and/or maintenance of the plant during the month.

- Marc Thomas
- Bobby Nichols
- Ray Giguere
- Shannon Eyler
- Alan Fabiano
- Cara Hanson
- Jackie Smith
- Greg Freiden
- Stephanie Crowell
- Wendy Foreman
- Mike Cherniak

5.3 BUDGET

Table 5.3 below is a breakdown of the current budget as of January 26, 2018.

Table 5.3 Budget Table

Budget Category	Month Budget	Month Actual	YTD Budget	YTD Actual	Annual Budget	Over (under)	% of budget
Labor (D.L. + OH)	$24,213	$21,337	$217,913	$191,936	$290,551	($25,977)	66%
Utilities	$8,150	$3,279	$73,350	$70,720	$97,800	($2,630)	72%
Chemicals	$14,583	$5,086	$131,250	$138,773	$175,000	$7,523	79%
Maintenance & Repair	$9,102	$17,301	$81,919	$99,023	$109,225	$17,104	91%
Chloride	$13,522	$10,234	$121,695	$105,444	$162,260	($16,251)	65%
Lab Supplies and Equipment	$1,882	$0	$16,938	$14,183	$22,584	($2,755)	63%
Office Supplies	$216	$87	$1,940	$3,394	$2,586	$1,455	131%
Miscellaneous Expenses	$1,141	$895	$10,271	$10,384	$13,695	$113	76%
Other Operating Costs	$1,398	$1,304	$12,582	$13,440	$16,776	$858	80%
Subtotal of Costs for Contract Year 3	**$74,206**	**$59,523**	**$667,858**	**$647,297**	**$890,477**	**($20,561)**	**73%**
Fixed Fee for Contract Year 3	$7,421	$5,952	$66,786	$64,730	$89,048	($2,056)	73%
Year One Transition	$1,366	$1,366	$12,292	$12,292	$16,389	$0	75%
Total	**$82,993**	**$66,841**	**$746,936**	**$724,318**	**$995,914**	**($22,617)**	**73%**

6. CAPITAL PLANNING

6.1 APPROVED CIP PROJECTS CURRENT STATUS

No new information is available.

6.2 DRAFT CAPITAL IMPROVEMENT PLAN

The CIP is a planning document that includes all projects anticipated to exceed $5,000 in cost over the next five years. The CIP is an ongoing process and will be refined from time to time as projects are completed and new issues are identified.

The most recent Capital List was included in the Year 2 Annual Report.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

DIVISION OF PUBLIC WATER SUPPLIES

MONTHLY IRON REMOVAL AND ION EXCHANGE SOFTENING REPORT

ON South Sangamon Water Commission

FOR MONTH OF January 2018

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Date	Time Meter Read	Pumping Totals: Hours Filter Run	UF Gal. Filtered (M gal)	Water Treated (M gal)	Plant Water (M gal)	Chlorine: Am't Used lbs.	Chlorine: Calc mg/l	Fluoride: Am't Used lbs.	Fluoride: Calc mg/l	Phosphate: Am't Used lbs.	Phosphate: Calc mg/l	NaMnO4: Am't Used lbs.	NaMnO4: Calc mg/l	Bi-Sulfite: Am't Used lbs.	Bi-Sulfite: Calc mg/l
1	7:00	17.6	1.204	1.072	0.000	180.0	2.24	9.0	0.33	34.0	1.25	1.00	0.10		
2	7:00	17.7	1.195	1.036	0.018	164.0	2.06	12.0	0.46	17.0	0.65	19.00	1.83		
3	7:00	15.2	1.061	0.959	0.002	143.0	2.02	27.0	1.11	43.0	1.77	20.00	2.17		
4	7:00	17.0	1.130	1.002	0.017	179.0	2.37	1.0	0.04	10.0	0.39	25.00	2.98		
5	7:00	16.2	1.129	0.997	0.009	162.0	2.15	1.0	0.04	7.0	0.28	22.00	2.28		
6	7:00	16.4	1.134	0.993	0.009	164.0	2.17	3.0	0.12	11.0	0.44	23.00	2.32		
7	7:00	16.6	1.132	1.000	0.013	136.0	1.80	6.0	0.24	19.0	0.75	19.00	1.93		
8	7:00	16.1	1.118	0.966	0.008	163.0	2.19	7.0	0.28	31.0	1.23	22.00	2.29		
9	7:00	16.8	1.139	1.005	0.012	153.0	2.01	9.0	0.35	33.0	1.30	22.00	2.21		
10	7:00	16.1	1.106	0.989	0.005	174.0	2.36	14.0	0.56	38.0	1.52	24.00	2.52		
11	7:00	16.4	1.143	1.022	0.013	127.0	1.67	10.0	0.39	53.0	2.05	31.00	3.10		
12	7:00	19.4	1.417	1.268	0.012	220.0	2.33	27.0	0.84	50.0	1.56	31.00	2.54		
13	7:00	20.3	1.502	1.351	0.017	88.0	0.98	21.0	0.82	23.0	0.67	15.00	1.15		
14	7:00	16.4	1.164	1.061	0.018	136.0	1.72	9.0	0.34	27.0	1.01	20.00	1.85		
15	7:00	14.5	0.897	0.768	0.000	172.0	2.87	21.0	1.08	37.0	1.91	23.00	2.93		
16	7:00	16.0	1.104	0.852	0.018	161.0	2.19	33.0	1.37	10.0	0.42	24.00	2.50		
17	7:00	17.0	1.235	1.098	0.000	125.0	1.52	6.0	0.22	6.0	0.22	19.00	1.77		
18	7:00	14.5	1.070	0.960	0.018	142.0	1.99	9.0	0.37	8.0	0.33	21.00	2.29		
19	7:00	14.8	1.047	0.932	0.000	170.0	2.43	25.0	1.06	14.0	0.59	26.00	2.82		
20	7:00	15.3	1.080	0.969	0.014	138.0	1.91	10.0	0.41	18.0	0.74	21.00	2.24		
21	7:00	16.1	1.129	1.039	0.014	159.0	2.11	22.0	0.84	33.0	1.26	23.00	2.35		
22	7:00	18.4	1.302	1.161	0.013	158.0	1.82	35.0	1.19	43.0	1.47	25.00	2.20		
23	7:00	18.4	1.282	1.153	0.014	156.0	1.82	2.0	0.07	38.0	1.30	25.00	2.26		
24	7:00	18.5	1.238	1.124	0.008	131.0	1.59	7.0	0.25	7.0	0.25	18.00	1.67		
25	7:00	16.2	1.090	0.977	0.013	136.0	1.87	7.0	0.28	16.0	0.65	21.00	2.20		
26	7:00	16.1	1.033	0.893	0.004	141.0	2.05	9.0	0.40	33.0	1.46	22.00	2.44		
27	7:00	15.8	1.053	0.914	0.013	136.0	1.94	8.0	0.35	17.0	0.74	20.00	2.19		
28	7:00	14.3	1.018	0.930	0.004	127.0	1.87	12.0	0.53	25.0	1.10	20.00	2.26		
29	7:00	15.1	1.075	0.937	0.010	132.0	1.84	16.0	0.68	25.0	1.06	20.00	2.14		
30	7:00	15.9	1.028	0.914	0.004	145.0	2.11	20.0	1.21	31.0	1.34	22.00	2.47		
31	7:00	16.3	1.085	0.941	0.014	129.0	1.78	13.0	0.55	4.0	0.17	2.00	0.21		
Total				31.38											
Max				1.35											
Min				0.77											
Ave.				1.01											

Date	UF Filters 1	UF Filters 2	UF Filters 3	UF Filters 4	Wash Water Gal. (M gal)	Water Softened Gal. (M gal)	Water Bypassed Gal (M gal)	Softeners 1	Softeners 2	Softeners 3	Softeners 4	Salt Regen: Salt Used lbs.	Salt Regen: Washed Water Gal.	Chloride in mg/L: IEX 1	IEX 2	IEX 3	IEX 4
1	0.75	0.75	0.75	0.75	0.144	0.795	0.409	41	42	42	40	9,124	41,400				
2	0.75	0.75	0.75	0.75	0.145	0.789	0.406					0	0				
3	0.75	0.75	0.75	0.75	0.109	0.700	0.361	45	46	47	40	9,124	41,400				
4	0.75	0.75	0.75	0.75	0.117	0.746	0.394				38	2,281	10,350				
5	0.75	0.75	0.75	0.75	0.130	0.745	0.394	45	44	43		6,843	31,050				
6	0.75	0.75	0.75	0.75	0.121	0.748	0.386		44	44	39	6,843	31,050				
7	0.75	0.75	0.75	0.75	0.132	0.747	0.385	44			39	4,562	20,700				
8	0.75	0.75	0.75	0.75	0.127	0.738	0.380	43	43	43		6,843	31,050				
9	0.75	0.75	0.75	0.75	0.118	0.752	0.387				40	2,281	10,350				
10	0.75	0.75	0.75	0.75	0.123	0.730	0.376	43	43	43		6,843	31,050				
11	0.75	0.75	0.75	0.75	0.132	0.754	0.389				38	2,281	10,350				
12	0.75	0.75	0.75	0.75	0.158	0.855	0.482	37	37	38	28	9,124	41,400				
13	0.75	0.75	0.75	0.75	0.170	0.881	0.511	35	32	32	32	9,124	41,400				
14	0.75	0.75	0.75	0.75	0.141	0.781	0.403					0	0				
15	0.75	0.75	0.75	0.75	0.100	0.582	0.305	30	57	52	50	9,124	41,400				
16	0.75	0.75	0.75	0.75	0.127	0.729	0.375					0	0				
17	0.75	0.75	0.75	0.75	0.147	0.815	0.420	67	39	38	36	9,124	41,400				
18	0.75	0.75	0.75	0.75	0.124	0.706	0.364					0	0				
19	0.75	0.75	0.75	0.75	0.110	0.691	0.356	47	47	48	43	9,124	41,400				
20	0.75	0.75	0.75	0.75	0.134	0.719	0.371				46	2,281	10,350				
21	0.75	0.75	0.75	0.75	0.114	0.745	0.384	42	45	43		6,843	31,050				
22	0.75	0.75	0.75	0.75	0.153	0.859	0.443		38	36	33	6,843	31,050				
23	0.75	0.75	0.75	0.75	0.128	0.846	0.438	38			35	4,562	20,700				
24	0.75	0.75	0.75	0.75	0.116	0.810	0.420	43	41	38		6,843	31,050				
25	0.75	0.75	0.75	0.75	0.102	0.719	0.371				37	2,281	10,350				
26	0.75	0.75	0.75	0.75	0.129	0.682	0.351		51	45		4,562	20,700				
27	0.75	0.75	0.75	0.75	0.131	0.695	0.358	49			42	4,562	20,700				
28	0.75	0.75	0.75	0.75	0.092	0.672	0.346	47	48	46	43	9,124	41,400				
29	0.75	0.75	0.75	0.75	0.124	0.710	0.366					0	0				
30	0.75	0.75	0.75	0.75	0.131	0.678	0.350	48	48	46	42	9,124	41,400				
31	0.75	0.75	0.75	0.75	0.119	0.716	0.368			46		2,281	10,350				

RTW Sample

Temp	14.6 °C	Alkalinity	300.0 mg/L	Sulfate	63.8 mg/L
TDS	420.0 mg/L	Calcium Hardness	64.3 mg/L		
pH	7.53 SU	Chloride	36.3 mg/L		

*Enter Final Reading Last Month

POINT OF APPLICATION

METER LOCATION

1. 12.5 % Chlorine Solution Fed
2. 23 % Fluoride Solution Fed
3. 40 % BisulfiteSolution Fed
4. 33 % Phosphate Solution Fed
5. 20 % Sodium Permanganate Fed

I certify that the information in this report is complete and accurate to the best of my knowledge

Reported by: ____________ Cert or Req: ____________

Bacterials Sent: ____________

Date:

CHLORINATION

Type of Chlorine Used

Chlorine Gas

Calcium Hypochlorite ____%

Sodium Hypochlorite _12.5_ %

Chlorine Test Kit Used: ______

FLUORIDATION

Type of Fluoride Used

Hydrofluosilicic Acid _23__%F

Sodium Fluoride ____%F

Other ____________

Type of Test Instrument Used

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

DIVISION OF PUBLIC WATER SUPPLIES

MONTHLY IRON REMOVAL AND ION EXCHANGE SOFTENING REPC

ON South Sangamon Water Commission

FOR MONTH OF January 2018

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Date	Time Meter Read	Hours Filter Run	Pumping Totals: Total Well (M gal)	UF Gallons Filtered (M gal)	Water Treated (M gal)	Plant Water (M gal)	Raw: pH	Temp deg. C	Total Alk. mg/L	Total Hard. mg/L	Total Fe mg/L	Total Mn mg/L
1	7:00	17.8	1.322	1.204	1.072	0.000	7.37	12.9	290	368	0.60	0.213
2	7:00	17.7	1.307	1.195	1.036	0.018	7.32	12.9	292	368	0.62	0.209
3	7:00	15.2	1.160	1.061	0.959	0.002	7.44	12.9	294	362	0.57	0.206
4	7:00	17.6	1.231	1.130	1.082	0.017	7.43	13.0	290	360	0.85	0.218
5	7:00	16.2	1.230	1.129	0.997	0.009	7.43	13.3	296	360	0.74	0.206
6	7:00	16.4	1.250	1.134	0.985	0.009	7.32	13.3	292	366	0.82	0.213
7	7:00	16.8	1.240	1.132	1.000	0.013	7.32	13.3	290	376	0.99	0.217
8	7:00	16.1	1.212	1.118	0.986	0.000	7.28	13.6	290	370	0.76	0.212
9	7:00	16.8	1.256	1.159	1.065	0.012	7.32	13.7	298	380	0.65	0.208
10	7:00	16.1	1.265	1.166	0.989	0.005	7.48	14.0	290	356	0.76	0.217
11	7:00	16.4	1.255	1.142	1.022	0.013	7.54	14.2	286	352	0.53	0.201
12	7:00	19.4	1.539	1.417	1.266	0.013	7.32	12.7	290	360	0.88	0.204
13	7:00	20.3	1.621	1.502	1.351	0.017	7.35	13.5	292	360	0.63	0.207
14	7:00	16.4	1.287	1.184	1.061	0.018	7.36	13.4	286	360	1.15	0.209
15	7:00	14.5	0.988	0.897	0.768	0.000	7.45	13.0	284	360	0.76	0.307
16	7:00	16.0	1.287	1.184	0.952	0.018	7.33	12.6	296	358	0.76	0.206
17	7:00	17.0	1.348	1.235	1.096	0.000	7.30	12.7	290	366	1.02	0.210
18	7:00	14.5	1.155	1.070	0.960	0.018	7.32	12.9	290	358	0.84	0.213
19	7:00	14.8	1.155	1.047	0.832	0.000	7.41	13.4	290	356	1.01	0.206
20	7:00	15.3	1.185	1.090	0.989	0.014	7.27	13.6	292	359	1.18	0.210
21	7:00	16.1	1.229	1.129	1.030	0.014	7.41	13.8	286	358	1.46	0.216
22	7:00	18.4	1.425	1.302	1.161	0.013	7.30	14.0	284	360	1.09	0.214
23	7:00	18.4	1.389	1.282	1.153	0.014	7.27	13.3	290	360	0.97	0.215
24	7:00	18.5	1.352	1.236	1.134	0.008	6.98	13.6	280	360	1.21	0.223
25	7:00	16.2	1.202	1.090	0.977	0.013	7.62	13.8	280	340	0.92	0.211
26	7:00	16.1	1.126	1.031	0.883	0.004	7.26	14.2	280	350	1.02	0.202
27	7:00	15.8	1.149	1.053	0.914	0.013	7.30	13.7	282	364	0.87	0.215
28	7:00	14.3	1.119	1.018	0.900	0.004	7.39	13.9	288	354	0.65	0.202
29	7:00	15.1	1.173	1.075	0.837	0.018	7.44	13.2	284	348	0.76	0.207
30	7:00	15.9	1.114	1.020	0.914	0.004	7.29	13.5	288	356	0.69	0.198
31	7:00	16.3	1.189	1.085	0.941	0.014	7.28	13.1	280	350	0.78	0.207
Total					31.38							
Max					1.35							
Min					0.77							
Ave.					1.01							

Date	Pre Filter: Tot Fe mg/L	Tot Mn mg/L	Sol Mn mg/L	Post Filter: Total Fe mg/L	Total Mn mg/L	Mem Turb. NTU	Post IEX: Total Fe mg/L	Total Mn mg/L	Finished: pH	Total Alk. mg/L	Total Hard. mg/L	Total Fe mg/L	Total Mn mg/L	F mg/L	Dist. Cl res. F mg/L	T mg/L	PO4 3-	Membrane Integrity Test Post Filter: Bank 1	Bank 2	Bank 3
1		0.205	0.179		0.170	0.12			7.80	282	118	0.01	0.023	0.52	1.5	1.7	1.58			
2		0.298	0.083		0.080	0.12			7.73	282	116	0.01	0.051	0.95	1.5	1.7	1.23			
3		0.354	0.027		0.021	0.10			7.79	286	110	0.01	0.014	0.87	1.4	1.6	1.37			
4		0.364	0.030		0.029	0.13			7.75	280	114	0.01	0.018	0.79	1.4	1.6	1.29			
5		0.365	0.020		0.028	0.14			7.81	280	128	0.01	0.011	1.01	1.4	1.6	1.21			
6		0.353	0.026		0.024	0.16			7.82	282	122	0.01	0.021	0.83	1.4	1.6	1.22			
7		0.372	0.030		0.027	0.13			7.86	280	120	0.01	0.016	0.82	1.4	1.5	1.27			
8		0.421	0.023		0.027	0.12			7.78	272	126	0.01	0.015	0.95	1.4	1.6	1.31			
9		0.391	0.026		0.027	0.13			7.92	270	132	0.01	0.015	0.89	1.4	1.6	1.27			
10		0.491	0.020		0.019	0.11			7.90	276	104	0.00	0.010	0.77	1.3	1.5	1.25			
11		0.373	0.030		0.018	0.13			7.86	280	112	0.00	0.024	0.94	1.3	1.4	1.40			
12		0.379	0.016		0.018	0.12			7.88	274	126	0.01	0.013	0.86	1.4	1.5	1.27			
13		0.367	0.031		0.027	0.13			7.86	280	112	0.00	0.013	0.85	1.4	1.6	1.21			
14		0.343	0.019		0.020	0.12			7.82	284	116	0.01	0.013	0.89	1.4	1.5	1.20			
15		0.345	0.023		0.017	0.16			7.74	270	120	0.01	0.007	0.86	1.4	1.5	1.26			
16		0.364	0.022		0.020	0.17			7.83	270	114	0.01	0.008	0.82	1.4	1.5	1.37			
17		0.372	0.027		0.004	0.15			7.81	282	122	0.01	0.012	0.90	1.3	1.5	1.14			
18		0.373	0.028		0.004	0.13			7.79	278	120	0.01	0.013	0.90	1.2	1.4	1.12			
19		0.377	0.028		0.030	0.18			7.88	260	110	0.00	0.008	0.82	1.3	1.5	1.23			
20		0.368	0.023		0.001	0.16			7.75	258	110	0.01	0.011	0.85	1.3	1.4	1.23			
21		0.365	0.025		0.030	0.14			7.89	272	112	0.01	0.011	0.84	1.2	1.3	1.29			
22		0.373	0.022		0.027	0.13			7.74	280	114	0.01	0.014	0.95	1.4	1.5	1.17			
23		0.344	0.027		0.022	0.12			7.78	270	114	0.01	0.012	0.87	1.3	1.4	1.34			
24		0.359	0.029		0.024	0.19			7.83	290	112	0.01	0.014	0.72	1.1	1.4	1.15			
25		0.353	0.028		0.033	0.13			7.80	270	118	0.01	0.015	0.81	1.3	1.4	1.05			
26		0.347	0.025		0.021	0.09			7.44	274	108	0.01	0.009	0.74	1.3	1.4	1.30			
27		0.365	0.022		0.024	0.14			7.80	280	124	0.01	0.012	1.06	1.2	1.4	1.13			
28		0.370	0.021		0.019	0.13			7.78	276	108	0.01	0.013	0.87	1.2	1.3	1.11			
29		0.362	0.054		0.047	0.10			7.50	280	110	0.02	0.014	0.90	1.2	1.3	1.11			
30		0.358	0.020		0.027	0.10			7.64	264	110	0.00	0.009	1.00	1.2	1.4	1.10			
31		0.286	0.029		0.007	0.18			7.58	276	104	0.01	0.014	0.89	1.2	1.4	1.32			

*Enter Final Reading Last Month

POINT OF APPLICATION

METER LOCATION:

1. 12.5 % Chlorine Solution Fed
2. 23 % Fluoride Solution Fed
3. 40 % Bisulfite Solution Fed
4. 33 % Phosphate Solution Fed
5. 20 % Sodium Permanganate Fed

I certify that the information in this report is complete and accurate to the best of my knowledge.

Reported by: Cert or Reg:

Bacterials Sent:

Date:

CHLORINATION

Type of Chlorine Used:

Chlorine Gas:

Calcium Hypochlorite: ____%

Sodium Hypochlorite: 12.5 %

Chlorine Test Kit Used: ______

FLUORIDATION

Type of Fluoride Used:

Hydrofluosilicic Acid: 23 %F

Sodium Fluoride: ____%F

Other: ______

Type of Test Instrument Used:

Layne®
2399 Cassens Drive
Fenton, MO
636.343.3700 PHONE

South Sangamon Water Commission
WELL NO. 1 PUMP
INSPECTION REPORT

JOB NAME	South Sangamon Well 1 Pull		WELL NO.	1	DATE	2/7/2018
JOB NO.	48716	INSPECTED BY	Iver Scouby, Austin Johnson			
		BOWL ASSEMBLY	Goulds 7 WALC			





As you know we've pulled the Well 1 Pump assembly and brought it to our shop for inspection. We've determined the piping is reusable, however the pump, motor and cable need replaced. We would also recommend chemical rehabilitation of well given the iron build-up.

The following estimate includes:

- Loading and mobilizing pump service rig to and from the site
- Installing new submersible pump assembly
- Running a brief pump testing of the well

The above Scope of Work would be performed on a time and material basis in accordance with the rates, terms, and conditions as outlined on our attached Work Order Form. Given the pump is in a 15' tower, will utilize a 3-man crew for setting the new pump assembly.

Layne®
2399 Cassens Drive
Fenton, MO
636.343.3700 PHONE

South Sangamon Water Commission
WELL NO. 1 PUMP
INSPECTION REPORT

Item	Description	Unit	Est. Qnt'y	Unit Price	Total Estimate
1	Labor: 3-man crew to install new pump assembly (2, 10 hour days)	HR	20	$428.00	$8,560.00
2	Materials: 100' of AWG #6 CABLE GRUNDFOS 300S150-4 Submersible Pump Setting Materials 15 HP 460 V MOTOR 4" X 6" ADAPTER 4" X 12" SST NIPPLE	LS	1	$5,896.00	$5,896.00
3	Shop Time: Machinist & Equipment	HR	10	$156.00	$1,560.00
4	Load, Mobilize, Demobilize from site	LS	1	$1,500.00	$1,500.00
	Per Diem: 1 night	LS	3	$110.00	$330.00
TOTAL					**$17,816.00**

In regards to chemical rehabilitation of the well, the following schedule represents the proposed treatment scenario:

1. Run initial specific capacity test
2. Introduce first treatment consisting of 6 drums of muriatic acid mixed with 1000 gallons of water. Refill tank and display with an additional 2000 gallons of water. Surge a minimum of 4 hours keeping PH at 2 by adding more muriatic acid if necessary. Let sit overnight.
3. Next day surge two hours maintaining the PH at 2. Pump to waste while neutralizing with caustic soda.
4. Introduce 15 gallons of sodium hypochlorite mixed with a gallon of Layne Oximate and 1400 gallons of water. Displace with 1000 gallons of water, surge two hours and let sit overnight.
5. Next day surge an additional two hours and then pump to waste neutralizing with sodium bisulfite.
6. Run specific capacity test.

NOTE: South Sangamon would be responsible for running the bacteria tests after the treatment.

Layne
2399 Cassens Drive
Fenton, MO
636.343.3700 PHONE

South Sangamon Water Commission
WELL NO. 1 PUMP
INSPECTION REPORT

Item	Description	Unit	Est. Qnt'y	Unit Price	Total Estimate
1	Labor: 3-man crew to chemically rehab well (3, 8 hour days)	HR	24	$428.00	$10,272.00
2	Materials: MURIATIC ACID CAUSTIC SODA CHLORINE SODIUM BISULFITE LAYNE OXIMATE	LS	1	$2,273.00	$2,273.00
	Per Diem: 2 nights for 3-man crew	LS	6	$110.00	$660.00
TOTAL					**$13,205.00**

Layne Christensen Company appreciates the opportunity to submit the above proposal. Please let me know if you have any further comments or questions at 314-502-7540.

Sincerely,

Austin Johnson
Austin Johnson
Account Manager