Monthly Operating Report

January: 2020

So. Sangamon Water Commission

February 18th, 2020

SSWC

9199 Buckhart Rd Rochester IL 62563

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EXECUTIVE SUMMARY

Safety. Safety is the number one priority at South Sangamon. We have instituted a monthly safety meeting for operations staff at the plant. There were no lost time accidents in the month of January 2020.

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 2020, the plant pumped 39.6 million gallons from the well field and 31.2 million gallons of finished water. This is 1.296 million gallons more than January of 2019.

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 1 emergency call-outs for the month. There was 1 customer inquiry for the month.

Maintenance and Repair. For the month of January 2020, there were 31 inspections, 3 preventative and 3 corrective maintenance activity completed.

Budget. Passed at May 20th 2019 meeting.

Capital Planning.

Pigging Project

Chloramines Project

New Berlin Meter relocation.

1. SAFETY

1.1 SAFETY TRAINING

At South Sangamon we strive to provide a safe working environment for all employees. This is accomplished with daily safety meetings and open communication.

1.2 LOST TIME ACCIDENTS

There were 0 lost time accidents in the month of January 2020.

1.3 SAFETY AUDIT

No safety audits to date.

1.4 MISCELLANEOUS SAFETY

No usable Fall Arrestors for aerator on premises

2. COMPLIANCE, FLOWS AND LOADINGS

2.1 COMPLIANCE

The finished water quality was within regulatory limits and all Bacteriological testing was completed for the month of January. 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 were 39.558 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 (MGD).
Max.	7.70	16.6	1.92	.252	-	370	300	1.45
Min.	7.50	14.1	.10	.177	-	345	280	1.138
Avg.	7.62	15.3	.98	.213	-	355	287	1.261
Total	-	-	-	-	-	-	-	39.1

2.3 EFFLUENT CONCENTRATIONS

The facility filtered 35.59 MG during the month with a daily average of 1.276 MG and a min/max .952/ 1.288 MG.

Table 2.3 Finished Water Quality

	Free CL2	Total CL2	pH	Temp	Iron	Manganese	Fluoride	Hardness	Alkalinity	Phosphate
Max.	1.8	1.9	8.20		0.04	0.039	0.89	380	300	2.33
Min.	1.3	1.4	8.00		0.01	0.001	0.35	100	240	1.05
Avg.	1.6	1.7	8.13		0.02	0.015	0.68	135	282	1.78
MCL	-	-	-	-	1.00	-	4.00	-	-	-
SMCL	-	-	-	-	0.30	0.050	2.00	-	-	-

Finished Water Flow Comparison for FY 2019-20

Time Period	2018-2019	2017-2018	2016-2017
Feb 2019-Jan 2020	380,970,204	401,431,013	393,063,344
Increase for the same period last year		-20.461 MG	

FINISHED WATER PUMPING HISTORY						
	2019-20	2018-19	2017-18	2016-17	2015-16	2014-15
Feb	28,625,431	25,617,914	27,373,232	26,095,228	26,336,077	28,745,378
March	31,237,000	28,217,699	30,068,363	27,851,811	28,729,919	31,217,486
April	28,418,249	27,110,578	29,625,797	29,292,618	29,270,184	31,690,073
May	33,045,927	33,304,196	32,120,873	33,349,391	33,371,016	31,157,411
June	33,460,303	34,040,000	39,931,402	41,541,321	31,092,539	38,462,951
July	23,742,374	41,178,722	42,164,927	35,378,396	33,123,375	38,674,894
Aug	25,018,633	35,176,238	38,760,634	35,401,490	38,109,133	33,748,543
Sept	34,234,782	34,754,000	39,896,986	36,325,215	36,546,171	29,763,075
Oct	30,769,238	30,353,482	33,506,605	34,374,820	34,783,455	28,803,052
Nov	30,877,400	30,464,000	28,617,333	30,478,309	27,217,293	28,426,579
Dec	29,703,954	31,930,000	28,808,037	32,525,530	27,788,637	28,656,869
Jan	30,073,516	28,823,375	30,556,824	30,449,215	28,510,121	30,346,721
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Totals	359,206,807	380,970,204	401,431,013	393,063,344	374,877,920	379,693,032
Avg	.984 MGD	1.04 MGD	1.10 MGD	1.07 MGD	1.03 MGD	1.04 MGD

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)**
January 2nd, 2020	.14	.18	210	0	8.2	<4
Minimum	.14	.18	210	0	8.2	<4
Maximum	.14	.18	210	0	8.2	<4
Average	.14	.18	210	0	8.2	<4
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, performed by the Springfield Metropolitan Sanitary District, was below 30,000 mg/l for the month of January 2020. The limit for chloride discharge to the sanitary district is 30,000 mg/L.

3. OPERATIONS

3.1 EVENTS IMPACTING OPERATIONS

There were no incidents impacting plant operations for the month of January.

3.2 EMERGENCY & SERVICE CALLS

Service Calls:

- There were 0 emergency call outs for the month.

3.3 EMERGENCY CALL-OUTS

There was 1 emergency call-out for the month requiring operational personnel at the plant after normal business hours

3.4 CUSTOMER INQUIRIE

There was 1 customer inquiry.

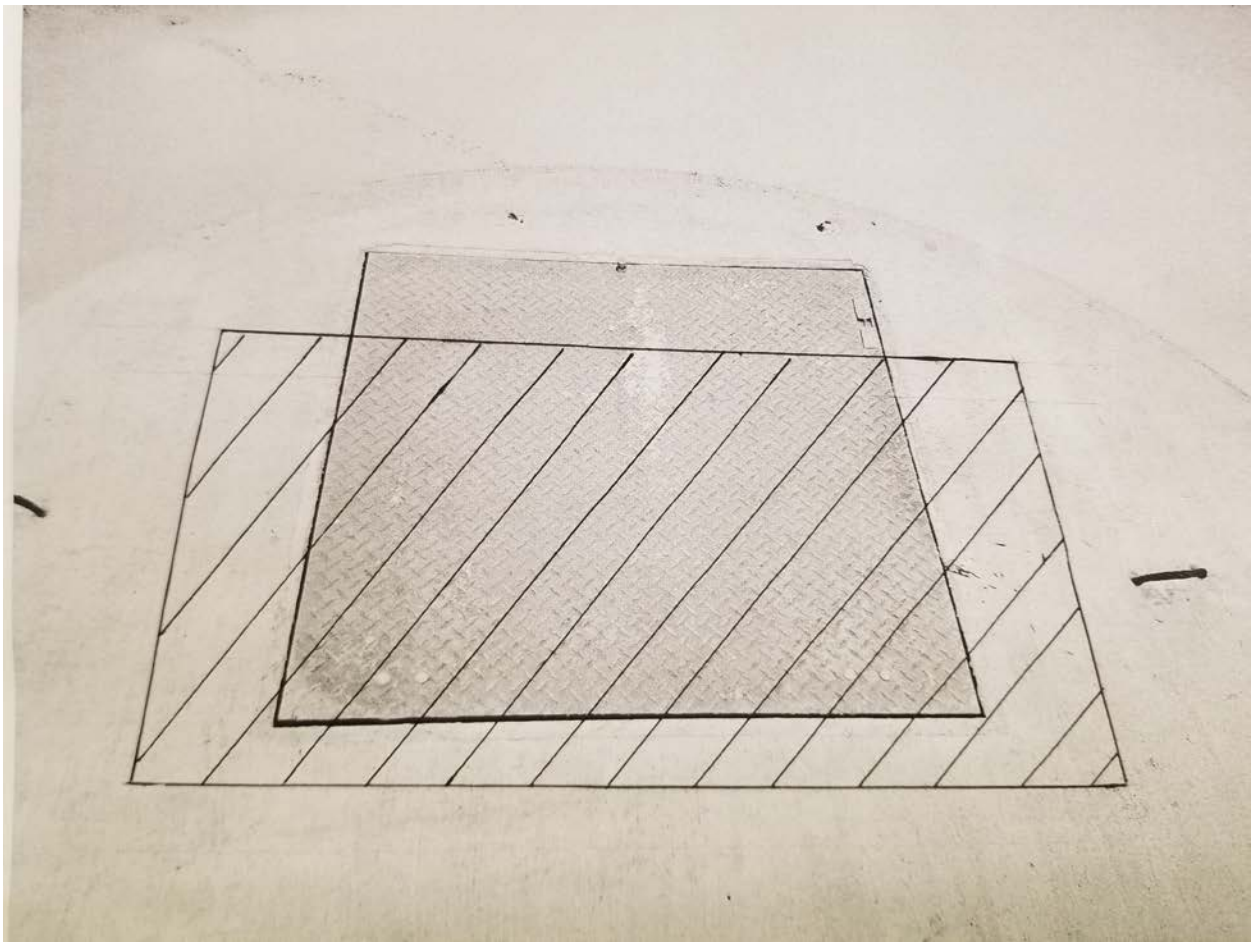
OTHER WORK PERFORMED
Learned correct operating procedures for the new filter train
Trouble shooting of new train
Trouble shooting of CIP skid and CIP procedure
Repaired chlorination system
Repaired air purge valve at Vigil Rd

Air purge drain line near Vigil Rd and New City Rd. on January 26th the valve stuck open requiring plant personnel to go to this location and close the valve.

Air purge valve ring had been damaged and the pit lid is missing.

Upon closer inspection, the pit lid was found to be in the pit.

Current pigging station pit lid that is slated to be replaced.



Loellke sent a new pit lid (interpretation of said new lid door). This lid also would not work due to location of hatch and height restrictions.

4. MAINTENANCE AND REPAIR

4.1 PREVENTATIVE AND PREDICTIVE MAINTENANCE

For the month of January 2020, there were 31 inspections, 3 preventative and 3 corrective maintenance activity completed.

4.2 CORRECTIVE REPAIR

Pulling and cleaning pre filters on all 3 filter trains on weekly basis

CIP train 1,2 and 3

Drained brine tank 1 and cleaned it out.

Drained brine tank 2 and inspected. Will Clean it out in the spring.

5. PROJECT MANAGEMENT & SUPPORT

5.1 STAFFING & TRAINING

- With the addition of a new staff member training has been continuous and ongoing.
- Operator and Asst. Operator have been studying for EPA licensing test.

5.2 OPERATIONAL SUPPORT

The following individuals, either on-site or remotely, provided assistance in operation and/or maintenance of the plant during the month of January 2020.

- Kevin Canham
- Stephen Bivin
- Katie Krall
- Keslee Carson (Westech)

5.3 BUDGET

Table 5.3 Operating Budget

Table 5.3 Budget Table

Budget Category	Month Budget	Month Actual	YTD Budget	YTD Actual	Annual Budget
Labor (D.L. + OH)	$13,909.06	?	$68237	$70128	$163,768
Utilities	$8,306.30		$40,750	$36,019	$97,800
Chemicals	$22,421		$110,000	$74,593	$264,000
Maintenance & Repair	$13,668.62		$67,056	$56,429	$160,937*
Chloride	$13,160		$65,800	$58,080	$157,920
Lab Supplies and Equipment	$1,918.09		$9,410	$5,987	$22,584
Office Supplies	$220.14		$1080	$627	$2,592
Miscellaneous Expenses*	$41		$123	?	$500
Other Operating Costs	$1398	?	$6990	$6107	$16,776
Engineering Fees	$2,500		**$7500**	**$5950**	$30,000
Office Equipment rental	$65		$542	$325	$780
Locates	$378	0	$1890	`$2,758	$4536
Truck	$3,333	0	$33,333	$35,560	$40,000
Total	**$81,318.21**	**$37337.12**	**$377,488**	**$349,805**	**$962193**

*as of September 30 2019

6. CAPITAL PLANNING

6.1 APPROVED CIP PROJECTS CURRENT STATUS

Chloramine conversion project- Hach arrived to commission analyzer. Mother board was damaged causing a fatal error to the equipment. Hach will commence startup of Monochloramine analyzer in February after parts arrive and repairs have been made.

New Berlin Meter master meter relocation project is commencing. Engineering and relocation plans have been finalized. Awaiting ground breaking.

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.

South Sangamon Water Commission

South Sangamon Water Commission - IL 1670080

January 2020

		Pumping Totals						Chemicals Applied														UF Filters					Softeners							
			Raw				Lagoon	Sodium Permanganate		Sodium Bisulfite BW		Sodium Hypochlorite		Ammonium Sulfate		Fluorosilicic Acid		Phosphate		Sodium Bisulfite Pond		Hours since previous backwash				Wash	Water	Water	Each day indicate total number of				Regeneration	
	Time	Hours	Well	UF	Plant	HS	Effluent	Am't		Am't		Am't		Am't		Am't		Am't		Am't						Water	Softened	Bypassed	hours since previous regeneration.				Salt	Washed
Date	Meter	Filter	Prod.	Filtered	Water	Pumpage	Pumpage	Used	Calc	Used	Calc	Used	Calc	Used	Calc	Used	Calc	Used	Calc	Used	Calc					Gal.	Gal.	Gal	If regeneration at mid-day, indicate				Used	Water
	Read	Ran	(Mgal)	(Mgal)	(Mgal)	(Mgal)	(Mgal)	lbs.	mg/l as NaMnO4	lbs.	mg/l	lbs.	mg/l as Cl	lbs.	mg/l as NH3	lbs.	mg/l as F	lbs.	mg/l as PO4	lbs.	mg/l	Bank # 1	Bank # 2	Bank # 3		(Mgal)	(Mgal)	(Mgal)	hours previous/hours following. 1	2	3	4	lbs.	Gal.
1	7:00	12.7	1.116	0.952	0.000	0.887	0.073	20	0.43	0	0.00	178	2.80	0	0.00	24	0.62	9	0.40	21	13.72	0.66	0.66	0.66		0.059	0.622	0.330		42.0	44.0	41.0	6843	32550
2	7:00	15.5	1.355	1.272	0.010	1.138	0.097	21	0.37	0	0.00	180	2.12	0	0.00	24	0.48	9	0.31	26	12.91	0.66	0.66	0.66		0.087	0.831	0.441	69.0		33.0		4562	21700
3	7:00	14.1	1.240	1.116	0.007	0.924	0.083	20	0.39	0	0.00	176	2.36	0	0.00	24	0.59	13	0.56	19	10.93	0.66	0.66	0.66		0.066	0.729	0.387	28.0	52.0		42.0	6843	32550
4	7:00	14.2	1.238	1.100	0.011	0.957	0.077	21	0.41	0	0.00	190	2.59	0	0.00	25	0.60	24	0.99	21	13.11	0.66	0.66	0.66		0.072	0.719	0.381			39.0		2281	10850
5	7:00	14.4	1.203	1.083	0.007	0.967	0.084	23	0.46	0	0.00	195	2.70	0	0.00	27	0.64	49	2.01	24	13.64	0.66	0.66	0.66		0.070	0.708	0.375		40.0	34.0	38.0	6843	32550
6	7:00	15.6	1.352	1.210	0.007	1.139	0.093	20	0.35	0	0.00	178	2.20	0	0.00	24	0.48	45	1.56	17	8.73	0.66	0.66	0.66		0.079	0.791	0.419	67.0	44.0		38.0	6843	32550
7	7:00	14.9	1.280	1.141	0.010	0.941	0.086	20	0.37	0	0.00	180	2.36	0	0.00	25	0.61	45	1.89	27	15.13	0.66	0.66	0.66		0.076	0.746	0.395	27.0		39.0		4562	21700
8	7:00	13.3	1.135	1.024	0.007	0.886	0.070	18	0.38	0	0.00	159	2.33	0	0.00	22	0.57	1	0.04	16	11.03	0.66	0.66	0.66		0.060	0.669	0.355		46.0		43.0	4562	21700
9	7:00	15.8	1.360	1.173	0.006	1.050	0.086	24	0.42	0	0.00	196	2.50	0	0.00	27	0.59	6	0.23	28	15.54	0.66	0.66	0.66		0.072	0.767	0.406	45.0		39.0	34.0	5843	32550
10	7:00	14.5	1.229	1.144	0.010	1.022	0.080	17	0.33	0	0.00	175	2.29	0	0.00	24	0.53	6	0.23	23	13.72	0.66	0.66	0.66		0.066	0.748	0.396	23.0	43.0	35.0		6843	32550
11	7:00	16.2	1.372	1.226	0.011	1.042	0.090	25	0.44	0	0.00	195	2.38	0	0.00	26	0.57	8	0.30	34	18.12	0.66	0.66	0.66		0.085	0.801	0.425				40.0	2281	10850
12	7:00	15.7	1.348	1.202	0.003	1.143	0.092	25	0.44	0	0.00	198	2.47	0	0.00	28	0.56	11	0.38	26	13.55	0.66	0.66	0.66		0.073	0.786	0.416	48.0	45.0	37.0	32.0	9124	43400
13	7:00	16.9	1.432	1.288	0.014	1.160	0.094	23	0.39	0	0.00	193	2.25	0	0.00	26	0.51	9	0.31	25	12.76	0.66	0.66	0.66		0.084	0.842	0.446	29.0		34.0		4562	21700
14	7:00	16.7	1.391	1.241	0.006	0.975	0.085	22	0.38	0	0.00	200	2.42	0	0.00	24	0.56	9	0.37	26	14.67	0.66	0.66	0.66		0.075	0.811	0.430		36.0		45.0	4562	21700
15	7:00	14.2	1.234	1.121	0.007	0.974	0.076	23	0.45	0	0.00	181	2.42	0	0.00	25	0.58	11	0.45	22	13.88	0.66	0.66	0.66		0.066	0.733	0.388		45.0	39.0		4562	21700
16	7:00	15.1	1.294	1.169	0.007	1.047	0.098	22	0.41	0	0.00	182	2.33	0	0.00	25	0.54	13	0.49	22	10.77	0.66	0.66	0.66		0.084	0.764	0.405	65.0		36.0	39.0	6843	32550
17	7:00	15.2	1.329	1.194	0.011	0.994	0.083	21	0.38	0	0.00	167	2.10	0	0.00	23	0.53	14	0.56	25	14.45	0.66	0.66	0.66		0.073	0.778	0.416	26.0	44.0			4562	21700
18	7:00	13.5	1.170	1.055	0.012	0.934	0.082	19	0.39	0	0.00	158	2.24	0	0.00	21	0.51	30	1.27	31	18.13	0.66	0.66	0.66		0.072	0.690	0.365			43.0	37.0	4562	21700
19	7:00	13.6	1.196	1.081	0.004	0.960	0.079	27	0.54	0	0.00	232	3.22	0	0.00	33	0.78	23	0.95	10	6.07	0.66	0.66	0.66		0.069	0.707	0.374		33.0		42.0	4562	21700
20	7:00	16.1	1.442	1.251	0.007	1.096	0.087	13	0.22	0	0.00	144	1.73	0	0.00	21	0.44	39	1.41	90	49.62	0.66	0.66	0.66		0.082	0.987	0.264			38.0		2281	10850
21	7:00	14.3	1.261	1.196	0.004	1.026	0.091	19	0.36	0	0.00	194	2.43	0	0.00	27	0.60	52	2.01	15	7.91	0.66	0.66	0.66		0.072	0.782	0.414	93.0	56.0	37.0	40.0	9124	43400
22	7:00	14.7	1.228	1.103	0.015	0.998	0.078	23	0.45	0	0.00	180	2.45	0	0.00	24	0.55	2	0.08	18	11.07	0.66	0.66	0.66		0.073	0.721	0.382	25.0				2281	10850
23	7:00	15.1	1.282	1.148	0.003	0.978	0.090	20	0.37	0	0.00	168	2.19	0	0.00	23	0.54	5	0.20	17	9.06	0.66	0.66	0.66		0.071	0.750	0.398	27.0	48.0	43.0	37.0	9124	43400
24	7:00	16.3	1.341	1.184	0.015	1.028	0.090	20	0.36	0	0.00	165	2.09	0	0.00	24	0.53	7	0.27		0.00	0.66	0.66	0.66		0.080	0.774	0.410	23.0			40.0	4562	21700
25	7:00	13.6	1.134	1.050	0.008	0.904	0.071	20	0.42	0	0.00	168	2.40	0	0.00	25	0.63	6	0.26	14	9.46	0.66	0.66	0.66		0.061	0.692	0.358		44.0	46.0		4562	21700
26	7:00	13.7	1.171	1.012	0.008	0.897	0.079	21	0.43	0	0.00	172	2.55	0	0.00	24	0.61	8	0.35	19	11.54	0.66	0.66	0.66		0.069	0.661	0.351	46.0			43.0	4562	21700
27	7:00	15.5	1.316	1.243	0.008	1.144	0.094	23	0.42	0	0.00	195	2.35	0	0.00	29	0.58	8	0.28	17	8.67	0.66	0.66	0.66		0.080	0.812	0.431		45.0	42.0	33.0	6843	32550
28	7:00	16.5	1.382	1.248	0.013	0.990	0.092	20	0.35	0	0.00	168	2.02	0	0.00	23	0.53	9	0.36	20	10.43	0.66	0.66	0.66		0.087	0.816	0.432	51.0				2281	10850
29	7:00	14.3	1.167	1.051	0.008	0.944	0.099	23	0.47	0	0.00	180	2.57	0	0.00	25	0.60	9	0.38	19	9.20	0.66	0.66	0.66		0.085	0.687	0.364		48.0	37.0	40.0	6843	32550
30	7:00	15.3	1.286	1.158	0.009	1.013	0.102	24	0.45	0	0.00	179	2.32	0	0.00	25	0.56	17	0.66	13	6.11	0.66	0.66	0.66		0.092	0.757	0.401	41.0		36.0		4562	21700
31	7:00	15.1	1.274	1.156	0.008	0.995	0.082	24	0.45	0	0.00	179	2.32	0	0.00	24	0.55	40	1.59	19	11.11	0.66	0.66	0.66		0.072	0.756	0.400		40.0		39.0	4562	21700
Total		462.6	39.558	35.592	0.256	31.153	2.664	661	12.48	0	0	5605	73.50	0	0.00	771	17.55	537	21.15	704	395.03					2.312	23.437	12.155	733	751	731	743	163232	781200
Ave.		14.9	1.276	1.148	0.008	1.005	0.086	21.3	0.40	0	0	181	2.37	0	0.00	24.9	0.57	17.3	0.68	23.5	12.74	0.66	0.66	0.66	#DIV/0!	0.075	0.756	0.392	43.1	44.2	38.5	39.1	5265.55	25200
Max		16.9	1.442	1.288	0.015	1.160	0.102	27.0	0.54	0	0	232	3.22	0	0	33	0.78	52	2.01	90	49.62	0.66	0.66	0.66	0	0.092	0.987	0.446	93.0	56.0	46.0	45.0	9,124	43,400
Min		12.7	1.116	0.952	0.000	0.886	0.070	13.0	0.22	0	0	144	1.73	0	0.00	21	0.44	1	0.04	10	0.00	0.66	0.66	0.66	0	0.059	0.622	0.264	23.0	33.0	33.0	32.0	2281	10850

1	20	% Sodium Permanganate	Pre-aerator	**CHLORINATION**		**FLUORIDATION**	
2	40	% BisulfiteSolution	Membrane Backwash				
3	12.5	% Sodium Hypochlorite Solution	Post Softener	Type of Chlorine Used	Sodium Hypochlorite 12.5 %	Type of Fluoride Used	Hydrofluosilicic Acid 19% F
4	20	% Ammonium Sulfate Solution	Post Softener				
5	19	% Fluorosilicic Acid Solution	Post Clearwell	Chlorine Analyzers Used: Hach CL17 (2) & 5500sc		Fluoride Analyzer Used: Hach 2200, SPADNS method	
6	33	% Phosphate Solution	Post Clearwell				
7	40	% BisulfiteSolution	Lagoon Effluent				

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

Reported by: _____ Illinois Operator Certification ID _____

Date: _____

Date Bacterials Ser _____

South Sangamon Water Commission

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF PUBLIC WATER SUPPLIES

South Sangamon Water Commission - IL1670080

January 2020

Physical and Chemical Tests

	Raw						Pre UF Membrane				Post UF Membrane			Post IEX				Finished													Membrane Integrity
																												Chlorine				Post Filter
Date	pH	Temp	Total Alk.	Total Hard.	Total Fe	Total Mn	Turbidity	Total Fe	Total Mn	Soluble Mn	Total Fe	Total Mn	Turbidity	1	2	3	4	pH	Turbidity	Total Alk.	Total Hard.	Total Fe	Total Mn	Fluoride	Ortho Phosphate	Free Ammonia	Mono- Chloramine	F	T	Distrbution		
		deg. C	mg/L	mg/L	mg/L	mg/L	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	NTU	Chloride mg/L	Chloride mg/L	Chloride mg/L	Chloride mg/L		NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/l	mg/l	mg/l	mg/L	F mg/l	T mg/L	Bank 1 psi	Bank 2 psi	Bank 3 psi
			as CaCO3																	as CaCO3													
1	7.60	14.3	282	355	0.72	0.214			0.326	0.062		0.042	0.45					8.10	0.34	280	100	0.02	0.013	0.74	1.66	0.00	0.00	1.58	1.79					
2	7.70	14.7	280	350	0.78	0.214			0.346	0.035		0.040	0.85					8.20	0.16	280	110	0.02	0.018	0.76	1.57	0.00	0.16	1.32	1.45					
3	7.70	14.9	282	355	0.67	0.221			0.336	0.041		0.048	0.36					8.20	0.30	280	100	0.01	0.008	0.62	1.62	0.00	0.02	1.52	1.77					
4	7.70	14.7	280	350	0.95	0.228			0.339	0.051		0.048	0.38					8.20	0.32	280	100	0.02	0.011	0.70	1.65	0.00	0.00	1.51	1.67					
5	7.60	14.6	280	358	1.95	0.250			0.325	0.037		0.039	0.39					8.20	0.33	280	105	0.01	0.014	0.65	1.51	0.04	0.00	1.55	1.70					
6	7.70	14.7	300	360	0.70	0.223			0.313	0.043		0.042	0.33					8.10	0.45	290	130	0.03	0.020	0.48	1.65	0.00	0.16	1.35	1.36			pass	pass	pass
7	7.70	15.4	290	350	0.59	0.216			0.340	0.042		0.030	0.28					8.20	0.27	290	100	0.01	0.012	0.66	1.80	0.00	0.05	1.62	1.68					
8	7.70	14.3	290	354	1.36	0.220			0.316	0.017		0.023	0.43					8.20	0.24	282	105	0.01	0.011	0.82	1.81	0.00	0.10	1.61	1.69					
9	7.70	15.6	280	350	0.82	0.222			0.343	0.032		0.036	0.40					8.20	0.20	278	100	0.02	0.011	0.78	1.83	0.04	0.00	1.49	1.62					
10	7.70	16.1	280	352	0.87	0.212			0.347	0.037		0.038	0.32					8.10	0.31	280	105	0.01	0.008	0.48	1.62	0.02	0.00	1.44	1.52					
11	7.70	14.9	286	350	0.79	0.216			0.330	0.038		0.033	0.39					8.20	0.34	282	110	0.01	0.010	0.82	1.89	0.02	0.00	1.45	1.65					
12	7.60	15.5	282	352	0.87	0.241			0.332	0.067		0.054	0.32					8.20	0.32	286	110	0.02	0.019	0.72	1.91	0.00	0.00	1.51	1.67					
13	7.70	14.7	300	360	0.70	0.223			0.313	0.043		0.042	0.33					8.10	0.45	290	130	0.03	0.020	0.48	1.65	0.00	0.16	1.35	1.36					
14	7.70	15.4	290	350	0.59	0.216			0.340	0.042		0.030	0.28					8.20	0.27	290	100	0.01	0.012	0.66	1.80	0.00	0.05	1.62	1.68					
15	7.70	14.3	290	354	1.36	0.220			0.316	0.017		0.023	0.43					8.20	0.24	282	105	0.01	0.011	0.82	1.81	0.00	0.10	1.61	1.69					
16	7.70	15.6	280	350	0.82	0.222			0.343	0.032		0.036	0.40					8.20	0.20	278	100	0.02	0.011	0.78	1.83	0.04	0.00	1.49	1.62					
17	7.70	16.1	280	352	0.87	0.212			0.347	0.037		0.038	0.32					8.10	0.31	280	105	0.01	0.008	0.48	1.62	0.02	0.00	1.44	1.52					
18	7.70	14.9	286	350	0.79	0.216			0.330	0.038		0.033	0.39					8.20	0.34	282	110	0.01	0.010	0.82	1.89	0.02	0.00	1.45	1.65					
19	7.60	15.5	282	352	0.87	0.241			0.332	0.067		0.054	0.32					8.20	0.32	286	110	0.02	0.019	0.72	1.91	0.00	0.00	1.51	1.67					
20	7.70	13.8	280	360	1.96	0.313			0.235	0.209		0.201	0.40					8.10	0.38	280	140	0.01	0.035	0.80	1.85	0.00	0.00	1.32	1.53					
21	7.70	14.1	282	365	1.55	0.271			0.388	0.174		0.144	0.50					8.20	0.44	280	180	0.02	0.072	0.74	1.67	0.41	0.00	1.30	1.63					
22	7.80	13.9	285	358	1.14	0.294			0.292	0.177		0.146	0.40					8.20	0.33	280	160	0.02	0.043	0.54	1.71	0.00	0.20	1.47	1.74					
23	7.80	14.6	285	350	1.94	0.321			0.328	0.132		0.176	0.30					8.20	0.36	285	110	0.02	0.038	0.82	2.04	0.00	0.00	1.52	1.71			pass	pass	pass
24	7.80	14.3	290	350	1.17	0.261			0.298	0.149		0.125	0.45					8.20	0.40	280	110	0.02	0.033	0.67	1.63	0.00	0.14	1.37	1.44					
25	7.80	14.6	290	356	0.70	0.235			0.295	0.131		0.099	0.41					8.20	0.40	290	200	0.01	0.036	0.72	1.69	0.00	0.19	1.55	1.61					
26	7.60	14.6	285	352	0.82	0.238			0.349	0.086		0.071	0.42					8.10	0.35	286	150	0.01	0.027	0.68	1.76	0.00	0.14	1.65	1.67					
27	7.80	14.2	280	360	0.75	0.260			0.336	0.111		0.110	0.37					8.20	0.31	285	102	0.02	0.030	0.65	1.78	0.00	0.13	1.59	1.61			pass	pass	pass
28	7.80	13.8	280	355	0.95	0.258			0.345	0.101		0.075	0.31					8.30	0.30	290	100	0.01	0.023	0.67	1.73	0.00	0.00	1.50	1.53					
29	7.80	14.2	280	355	0.92	0.241			0.349	0.053		0.034	0.48					8.30	0.31	280	90	0.02	0.007	0.80	1.81	0.00	0.02	1.29	1.63					
30	7.70	14.2	290	360	0.95	0.256			0.376	0.056		0.042	0.42					8.20	0.27	285	102	0.02	0.028	0.54	1.99	0.00	0.01	1.47	1.63					
31	7.80	14.3	290	350	1.04	0.246			0.359	0.038		0.033	0.24					8.30	0.26	280	105	0.02	0.003	0.68	1.81	0.00	0.02	1.57	1.62					
Ave.	7.71	14.7	285	354	1.00	0.239	#DIV/0!	#DIV/0!	0.331	0.071	#DIV/0!	0.064	0.39	#####	#####	#####	#####	8.19	0.32	283	116	0.02	0.020	0.69	1.76	0.02	0.05	1.48	1.62	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Max	7.80	16.1	300	365	1.96	0.321	0.00	0.00	0.388	0.209	0.00	0.201	0.85	0	0	0	0	8.30	0.45	290	200	0.03	0.072	0.82	2.04	0.41	0.20	1.65	1.79	0.00	0.00	0.00	0.00	0.00
Min	7.60	13.8	280	350	0.59	0.212	0.00	0.00	0.235	0.017	0.00	0.023	0.24	0	0	0	0	8.10	0.16	278	90	0.01	0.003	0.48	1.51	0.00	0.00	1.29	1.36	0.00	0.00	0.00	0.00	0.00

Lagoon Effluent Tests		pH	Temp	TChlor	Mn	Fe	Chloiride	TSS
Monthly			°C	mg/l	mg/l	mg/l	mg/L	mg/L
Date	1/2/2020	8.2	14.1	0	0.18	0.14	210	<4

Distribution Stability Tests		pH	Temp	TDS	Alkalinity	Calcium	Chloiride	Sulfate	Remarks
Every Two Weeks			°C	mg/L	mg/L as CaCO3		mg/L	mg/L	
Date	1/9/2020	8.14	17.1	360	260		40	67	
Date									