

January 2024

OPERATIONS' DEPARTMENT MONTHLY REPORT

PUMPAGE		HIGH LIFT		LOW LIFT		2024 VS 2023
		2023	2024	2023	2024	HL
Total in MG		350.916	336.917	361.303	348.611	-3.99%
Daily Average (MG)		11.320	10.885	11.655	11.246	
Max. Day (MG)		13.403	12.648	13.614	13.145	2024 VS 2022
						HL
Gal/KwH		1,201	1,237	4,941	4,872	-7.54%
ELECTRICAL COSTS						
		2023		2024		
A. Pumping:		KwH	\$	KwH	\$	
High Lift		292,078	\$24,984.26	268,866	\$23,818.89	
Low Lift		73,129	\$6,255.43	71,103	\$6,299.01	
Wash Pump 1		3,500	\$299.39	3,500	\$310.07	
Georgia St. Bstr.		48,300	\$5,271.05	48,000	\$5,153.54	
Wilgus Ave. Bstr.		3,000	\$425.75	3,300	\$480.33	
EE Pit / Bstr.		5,741	\$776.37	5,311	\$742.28	
Erie Ave. Bstr.		14,000	\$2,272.72	15,200	\$2,639.69	\$/KwH
Sub Total		439,748	\$40,284.97	415,280	\$39,443.81	3.7%
B. Treat./Fiscal/Misc.		KwH	\$	KwH	\$	
Office & Maint. Bldg.		5,674	\$772.10	5,101	\$722.21	
Filter Plant / Pump Station / 2nd Service		74,093	\$7,000.73	101,631	\$9,587.89	
Sub Total		79,767	\$7,772.83	106,732	\$10,310.10	\$/KwH -0.9%
C. Distribution:		KwH	\$	KwH	\$	
Taylor Hill Tank		3,042	\$422.87	3,387	\$482.84	
Horizon Tower				2,637	\$402.44	
EE Tower		1,400	\$206.14	1,353	\$206.92	
Washington (PRV) Pit		826	\$135.57	833	\$141.89	
Sub Total		5,268	\$764.58	8,210	\$1,234.09	\$/KwH
Total Electrical Costs		524,783	\$48,822.38	530,222	\$50,988.00	3.4%
Electrical Cost / MG			\$139.13		\$151.11	
		2023		2024		
NATURAL GAS COSTS		CCF Used	Cost	CCF Used	Cost	
Production Facility		1,534	\$1,603.41	2,525	\$1,441.92	
South Basin		3,188	\$3,352.19	3,664	\$2,059.75	
Raw Pump Station				1,261	\$740.97	
Georgia St. Bstr.		419	\$456.78			
Erie Ave. Bstr.				376	\$245.67	
Wilgus Ave. Bstr.		48	\$66.94			
Office & Maint. Bldg.		1,464	\$1,555.36	1,367	\$793.09	\$/CCF
Total Natural Gas Costs		6,653	\$7,034.68	9,193	\$5,281.40	-45.7%
Natural Gas Cost / MG			\$20.05		\$15.65	
		2023		2024		
CHEMICAL COSTS		Lbs. Used	Cost	Lbs. Used	Cost	
Alum		59,955	\$12,080.93	60,698	\$12,837.63	5.0%
Carbon		0	\$0.00	0	\$0.00	#DIV/0!
Chlorine		5,804	\$11,782.12	5,699	\$10,714.12	-7.4%
Fluoride		1,626	\$3,286.96	1,504	\$3,818.85	25.6%
KMnO4		0	\$0.00	0	\$0.00	#DIV/0!
Cationic Polymer		0	\$0.00	0	\$0.00	#DIV/0!
Liquid Phosphate		4,089	\$12,508.25	3,961	\$11,657.22	-3.8%
Total Chemical Costs			\$39,658.26		\$39,027.82	-1.6%
Chemical Cost / MG			\$113.01		\$115.66	
		Grand Total		\$95,515.32		-0.23%
		Total Cost / MG		\$272.19		3.76%

YTD HL 2024 vs 2023	-3.84%	YTD HL HIGH DAY PUMPAGE	12.648	January 15, 2024
YTD HL 2024 vs 2022	-7.39%	YTD HL LOW DAY PUMPAGE	8.349	January 1, 2024

NOTE:

	YTD HL Ave Day
2024	10.885
2023	11.320
2022	11.754

COMPARATIVE SUMMARY OF PLANT OPERATIONS

January 2023

vs

January 2024

Pumping Record

High Lift

	2023	2024	Diff.
Tot. Water in MG	350.916	336.917	-3.99%
Daily Average	11.320	10.885	-3.84%
Maximum Day	13.403	12.648	-5.63%
Minimum Day	9.294	8.349	-10.17%
By Natural Gas	0.000	4.879	#DIV/0!
Power in KWH	292,078	268,866	-7.95%
Gals. per KWH	1,201	1,237	2.99%
Power \$ / KWH	\$0.08554	\$0.08859	3.57%
Power \$ / MG	\$71.20	\$70.59	(\$0.61)
Tot. Power \$/MG	\$140.22	\$169.78	\$29.56

Low Lift

	2023	2024	Diff.
Tot. Water in MG	361.303	348.611	-3.51%
Daily Average	11.655	11.246	-3.51%
Maximum Day	13.614	13.145	-3.44%
Minimum Day	9.619	8.442	-12.24%
By Natural Gas	0.000	2.220	#DIV/0!
Power in KWH	73,129	71,103	-2.77%
Gals. per KWH	4,941	4,872	-1.40%
Power \$ / KWH	----	----	----
Power \$ / MG	\$17.31	\$18.07	\$0.76
Tot. Power \$/MG	----	----	----

Treatment Chem.

Lbs. Used

Total Lbs.	2023	2024	Diff.
Alum	59,955	60,698	1.24%
Carbon			#DIV/0!
Chlorine	5,804	5,699	-1.81%
KMnO4	0	0	#DIV/0!
Polymer	0	0	#DIV/0!
Liquid Phosphate	4,089	3,961	-3.13%
Lb/ MG:			
Alum	165.9	174.1	4.93%
Carbon	0.0	0.0	#DIV/0!
Chlorine	16.1	16.3	1.77%
KMnO4	0.0	0.0	#DIV/0!
Liquid Phosphate	11.3	11.4	0.40%

Cost

Total Cost	2023	2024	Diff.
Alum	\$12,080.93	\$12,837.63	\$756.70
Carbon	\$0.00	\$0.00	\$0.00
Chlorine	\$11,782.12	\$10,714.12	(\$1,068.00)
KMnO4	\$0.00	\$0.00	\$0.00
Polymer	\$0.00	\$0.00	\$0.00
Liquid Phosphate	\$12,508.25	\$11,657.22	(\$851.03)
Cost / MG:			
Alum	\$33.44	\$36.83	\$3.39
Carbon	#DIV/0!	#DIV/0!	#DIV/0!
Chlorine	\$32.61	\$30.73	(\$1.88)
KMnO4	#DIV/0!	#DIV/0!	#DIV/0!
Liquid Phosphate	\$34.62	\$33.44	(\$1.18)

Fluoride:	2023	2024	
Total Lbs.	1,626	1,504	-7.50%
mg/l applied as F	0.72	0.65	
Av. Res. Plt. Tap	0.71	0.70	

Fluoride:	2023	2024	
Cost	\$3,286.96	\$3,818.85	\$531.89
Cost/MG	\$9.38	\$11.33	\$1.95

Water Quality:

Raw

	2023	2024
Turbidity	7.90	9.20
pH	8.25	8.27
Alkalinity	114.5	112.4
MF (E-Coli)	1.1	1.0
Temperature	34.6	34.6
Wash-H2O % /LL	2.40	2.45
Av. Flt. Run/hrs	86.3	90.6
Av. ROF / MG	1.39	1.46

TAP

	2023	2024
Turbidity	0.039	0.037
pH	7.60	7.58
Alkalinity	104.6	101.3
Plate Count	0.00	0.00
Colilert	0	0
Temp.	35.2	37.6
Cl Res.	0.89	0.90

Natural Gas:

	2023	2024		2023	2024	Diff.
Nat. Gas Heating	4,660	5,464	Plant & South Basin	\$4,890.79	\$3,087.82	(\$1,802.97)
Nat. Gas Pumping	62	725		\$64.81	\$413.85	\$349.04

	CCF	Cost	Natural Gas Cost	Natural Gas CCF
#3 Gas Pump	223.2	\$127.46	\$3,501.67	6,189
#4 Gas Pump	207.0	\$118.21		
#7 Gas Pump	112.5	\$64.24		
Electric Generator	182.0	\$103.93		
Pumping totals	724.7	\$413.85		

January 2024

		2/1/2024	1/1/2024	
% Run	Elapsed Time:			
34.0%	No. 6 Pump	76,165.2	75,912.5	252.7
3.82%	Wash Pump Meter	5,952.30	5,923.89	28.41
0.6%	No. 7 Pump	878.4	873.9	4.5
1.9%	No. 8 Pump	59,554.4	59,540.3	14.1
97.6%	No. 9 Pump	34,157.0	33,431.0	726.0
0.0%	No. 11 Pump			
0.0%	No. 12 Pump			
0.0%	No. 13 Pump			
0.0%	No. 14 Pump			
0.9%	Wash Pump 2	191	184	7
	No. 1 Prime Pump	1,059.2	1,057.3	1.9
	No. 2 Prime Pump	1,142.5	1,140.1	2.4
Kw/Hr run	Watthour Meters:			
123.2	Wash Pump 1	1334.1	1329.1	3,500
#DIV/0!	No. 14 Pump			
#DIV/0!	No. 13 Pump			
#DIV/0!	No. 12 Pump			
#DIV/0!	No. 11 Pump			
69.5	No. 9 Pump	6396.44	6345.99	50,453
153.9	No. 8 Pump	6843.3	6837.1	2,170
73.1	No. 6 Pump	2851.2	2785.2	18,480
128.2	Wash Pump 2	20.1157	19.3681	897
536.6	No. 1 Pump	10076.96	10040.216	36,744
#DIV/0!	No. 2 Pump	5002.007	5002.007	0
295.7	No. 3 Pump	1372.593	1232.92	139,673
#DIV/0!	No. 4 Pump			0
480.3	No. 5 Pump	13,107.170	13,014.721	92,449
	Garage (MWatt/Hrs.)	1,125.33	1,118.33	7,000
	Power Co. (Step #3)	43,773	43,402	445,200
	Left Meter - OUTSIDE			
	Volume Used:			
	Nat. Gas (Correct)	46,766,794	46,552,910	268,852

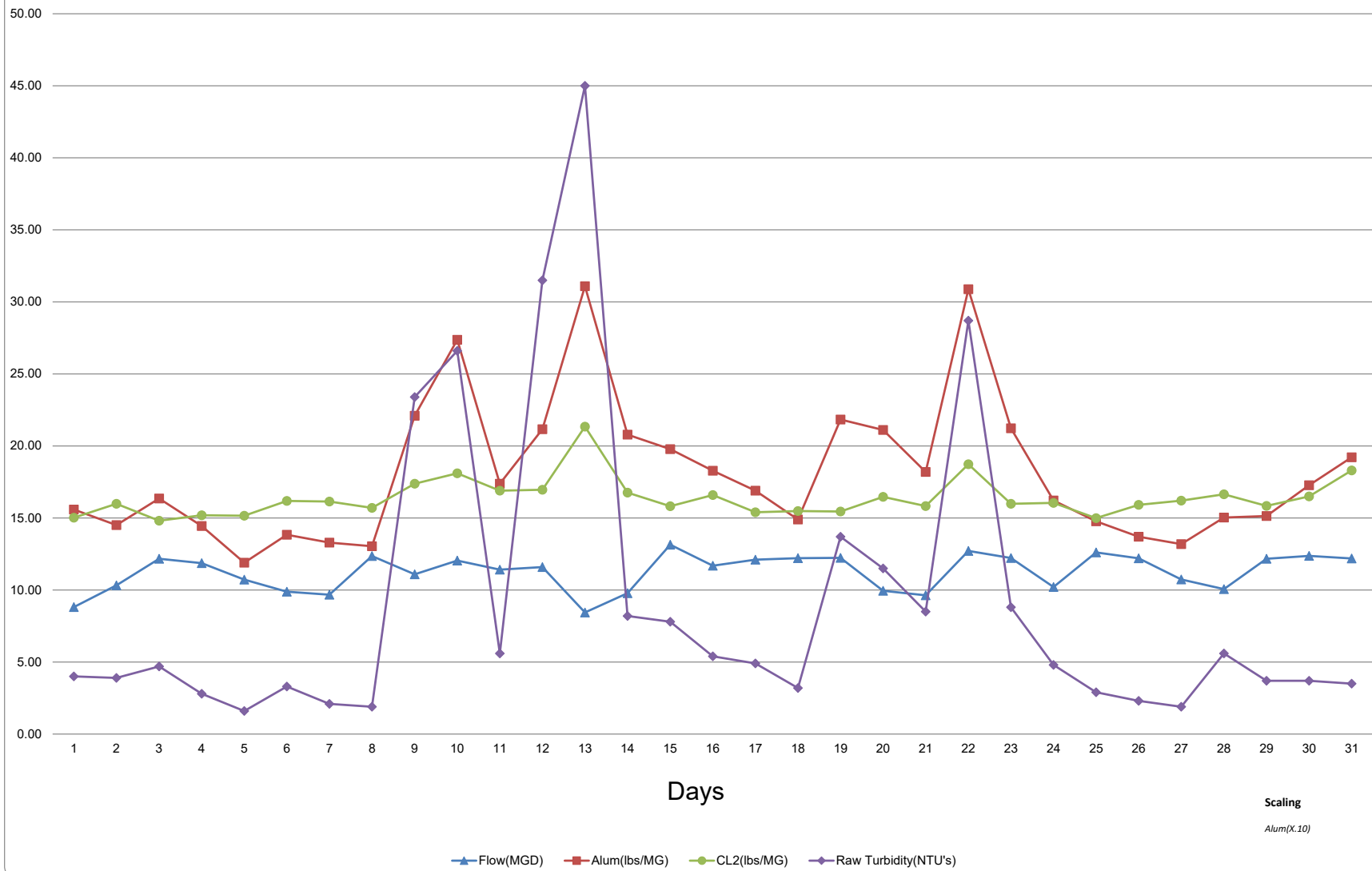
	Elapsed Time:			
	Emer. Generator	1,172.0	1,162.9	9.1
% Run	Elapsed Time:			
9.2%	No. 1 Pump	18,686.1	18,617.6	68.5
0.0%	No. 2 Pump	21,331.56	21,331.56	0.00
63.5%	No. 3 Elec. Pump	4,685.4	4,213.0	472.4
1.0%	No. 3 Nat. Gas Pump	611.0	603.8	7.2
0.0%	No. 4 Elec. Pump	0.00	0.00	0.0
0.6%	No. 4 Nat. Gas Pump	160.0	155.4	4.6
25.9%	No. 5. Pump	27,404.480	27,212.010	192.470
0.7%	UV Building Generator	186.6	181.4	5.2

	2/1/2024	1/1/2024	
SLUDGE No. 1 Hour Meter	0.0	0.0	0
SYSTEM No. 2 Mag Meter	720,890	615,970	104,920
Recycle Meter (Reset to zero each month)			104,920

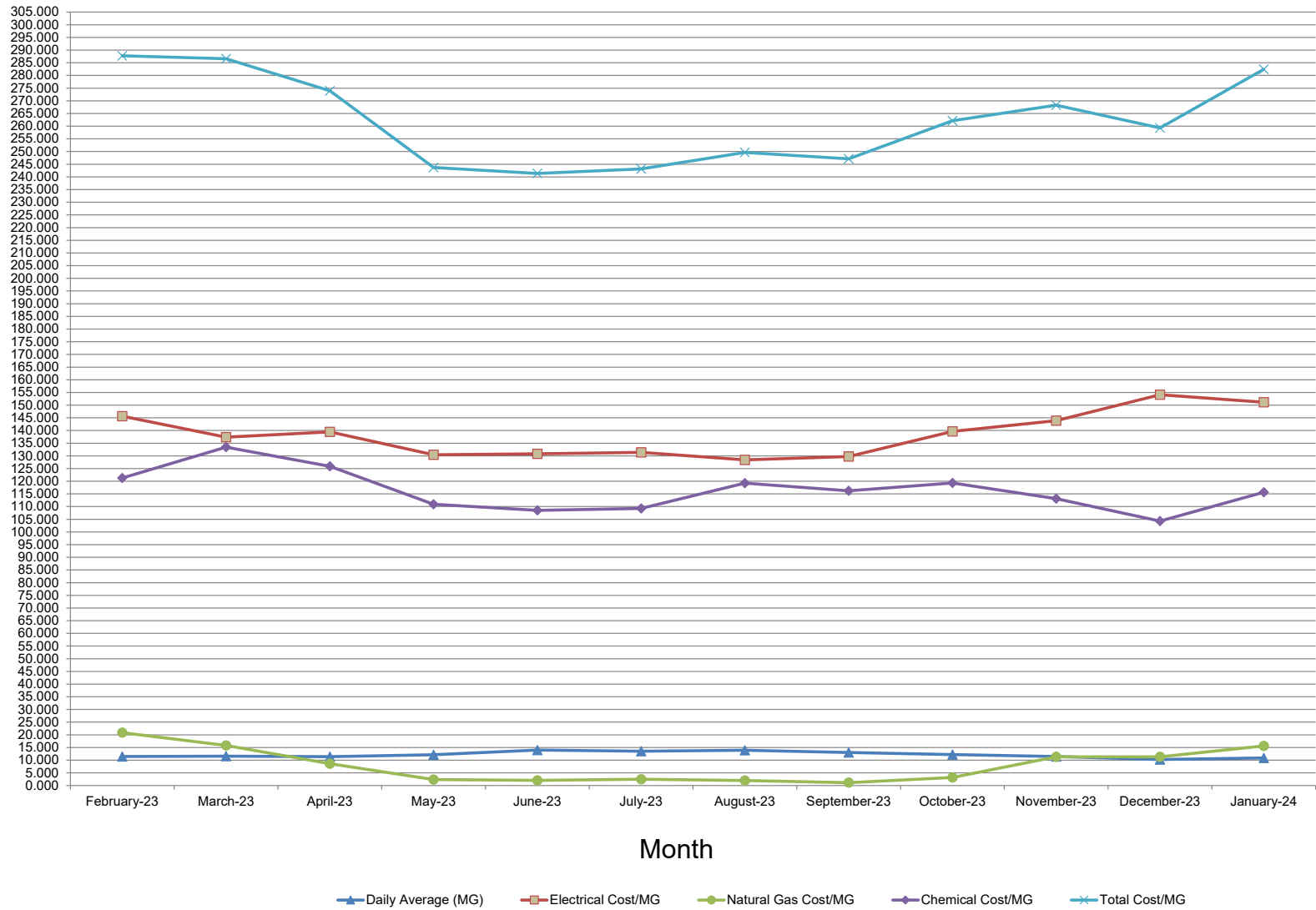
Power Cost	\$0.0885902	Bill >>>	\$41,141.29
	5.755	KWH >>>	464,400
Init. Chg.	\$39,440.36		
	\$	KWH	
Low L. (1929)	\$6,299.01	71,103	Low L. KWH 71,103
Low L. (2024)	\$0.00	0	L.L. Cost \$ \$6,299.01
			High L. KWH 268,866
			H.L. Cost \$ \$23,818.89
Horizon	\$402.44	2,637	
Taylor	\$482.84	3,387	
ALT. 72 Park	\$575.50	100	
Geo. Ave.	\$5,153.54	48,000	Total Cost \$30,117.90
Wilgus Ave.	\$480.33	3,300	
EE Pit	\$742.28	5,311	
EE Tower	\$206.92	1,353	Plant Costs \$9,587.89
Washington	\$141.89	833	
Office	\$722.21	5,101	
Erie Ave.	\$2,639.69	15,200	
Total	\$57,287.01	601,525	

	HIGH LIFT		LOW LIFT	
	2023	2024	2023	2024
Tot. Pump	350.916	337.427	361.303	348.611
Daily Ave.	11.320	10.885	11.655	11.246
Max. Day	13.403	12.648	13.614	13.145
Min. Day	9.294	8.349	9.619	8.442
By Nat. Gas	0.000	4.879	0.000	2.220
Power KWH	292,078	268,866	73,129	71,103
Gals/KWH	1201	1237	4941	4872
Cost/KWH	\$0.08554	\$0.08859	*****	*****
Cost/MG	\$71.20	\$70.59	\$17.31	\$18.07
Tot. Cost/MG	\$140.22	\$169.78	*****	*****

January 2024: Sheboygan Water Utility Plant Operations Summary



Plant Operations: Expense Report



Filter Plant Maintenance Completed For January 2024

Subject	StartDate	EndDate	Description	
Utility observed new years	1-Jan-24			
Tuesday Meeting	2-Jan-24		Topics include filter maintenance, coverage, raw water improvement project, Georgia pump 4, etc.	
Filter 3 Maintenance	2-Jan-24		Continue removing caps, chipping, and scraping gasket material; Wayne and crew.	
H.L. #2 switch gear	2-Jan-24		Trouble shooting high lift #2 switch gear, ordered new coin battery and will replace when they come in	
EE tower reset comms	2-Jan-24		Went to EE tower and reset comms, killed power and rebooted sysem	
Batteries plus and trillings	2-Jan-24		Checked batteries plus and trillings for #2 switch gear batteries, had to order through amazon	
Filter 3 Maintenance	3-Jan-24		Vacuum filter 3 concrete remnants and filter media.	
Filter 4 Maintenance	3-Jan-24		Continue removing caps, chipping, and scraping gasket material; Wayne and crew.	
Filter 4 Maintenance	3-Jan-24		Begin removing cap screws on north and south sides.	
Filter Maintenance Inventory	4-Jan-24		Inventory all parts for filter maintenance on 3 and 4.	
Pump 6	4-Jan-24		Disassemble vacuum pot and repair to eliminate vacuum issue on raw water line.	
Filter 3 + 4	4-Jan-24		Assist Damian fabricating 2 surface wash pipe brackets out of aluminum.	
Low Lift Heating Cage	4-Jan-24		Grind, weld, and prime heater belt drive surround.	
Low Lift Heater	4-Jan-24		Disassemble heating unit for repair.	
Low Lift Heat	5-Jan-24		Install guard after spot weld and prime.	
Filter 3	5-Jan-24		Wash filter after cap removal; minor sand found southern chamber.	
Georgia Ave.	5-Jan-24		Install valve wheel adapters on pump 4.	
Georgia Ave.	5-Jan-24		Drop of tools and parts for pump 4 repair.	
Sodium Thio Barrel	8-Jan-24		Replace sodium thio barrel.	
Vacuum Pots on Pumps 9+6.	8-Jan-24		Clean vacuum pots on low lift pumps 9 and 6; East suction line has excessive air causing poor flow meter reads.	
Monday Meeting	8-Jan-24		Topics include filter 4 maintenance, Georgia Ave. pump 4, air in East suction line, coverage, and vacation.	
New Permanganate Tank	8-Jan-24		Unload and check potassium permanganate tank.	
Filter 4 Vacuum	8-Jan-24		Assist crew vacuuming filter 4; Middle of north side has sand infiltration.	
Filter 4 Maintenance	8-Jan-24		Continue removing caps and chipping grout.	
Dan Covering Laboratory	9-Jan-24	10-Jan-24	Dan covering laboratory for Eric.	
UVT% Meter	9-Jan-24		Replace bulb, clean crystal, repair seal damage, and install new desiccant pack.	
Filter 3 Wash	9-Jan-24		Wash filter 3 for the second time after cap removal.	
Filter 4 Wash	9-Jan-24		Wash filter 4 after cap removal.	
Joshua Covering 2nd Shift	9-Jan-24	10-Jan-24	Joshua covering second shift for Glen.	
Changed light south basin	9-Jan-24		Replaced light in south basin	
Cleaned Hypo analyzers	9-Jan-24		Cleaned south/east/west Hypo analyzers	
H.L. Eductor	10-Jan-24		Remove and clean H.L. eductor; suspect it was plugged eliminating its ability to remove air from the 24" low lift line feeding 6+7.	
Low Lift Air Leak	10-Jan-24		Troubleshoot air infiltrating the low lift suction line. We suspect the H.L. venturi is plugged.	
Raw Water Air Relief	10-Jan-24		Clean out the raw water air relief in the UV room.	
Horizon X2	10-Jan-24		Reset radio comms. and PLC after SCADA service.	
Dan on vacation	11-Jan-24	12-Jan-24	Dan on vacation	
Joshua Covering Laboratory	11-Jan-24	12-Jan-24	Joshua covered the laboratory for Eric.	
Rapid Mix Furnace	11-Jan-24		Repair heater inop caused by disconnected limit switch.	
Raw Water Sample Pump	11-Jan-24		Rebuild raw water sample pump; mechanical seal, spring, and O-ring replaced	
Joshua Covering 1st	11-Jan-24	12-Jan-24	Joshua covering 1st shift for Glen.	
West UV reference check	15-Jan-24		Completed west reactor UV reference check	
Security cameras	15-Jan-24		Reset security cameras by low lift Scada panel	
UV Reference Check Paperwork	15-Jan-24		Fill out reference sensor paperwork.	
Snow Removal	15-Jan-24		Remove snow from fluoride walk and outside hypo doors.	
Kohler Tower	15-Jan-24		Access building and reset SCADA system.	
Georgia Ave.	15-Jan-24		Reset radio communication device, check building, and jam cell tower building door shut.	
Dan 2 hours app	16-Jan-24		Dan 2 hours Medical app	
Alum Fill	16-Jan-24		Deice and free bulk alum fill point.	
Georgia Ave.	16-Jan-24		Begin disassembling pump 4.	
Impellor Stands	16-Jan-24		Fabricate 2 new impellor repair stands.	
Georgia Ave.	17-Jan-24		Pickup impellor and clean area.	
Georgia Pump 4	17-Jan-24		Begin cleaning up impellor bearing seats and shaft.	
H.L. Area	18-Jan-24		Assemble arbor press and parts washer.	
Truck 10	18-Jan-24		Install sway links and wheels; all 4 ball joints are loose.	
Harbor Freight	18-Jan-24		Purchase arbor press, parts washer, cleaning brushes, Allen wrenches, and degreaser.	
Menards	18-Jan-24		Purchase cleaning supplies, WD-40, Brillo pads, rubber gloves, and sand paper.	

Georgia Pump 4	18-Jan-24		Continue tearing down impeller and bearings.
Dan operating 1st shift	18-Jan-24	19-Jan-24	Dan Covering 1st shift operations
Trouble shoot back wash basin	19-Jan-24		Trouble shooting back wash basin valves not working with SCADA
Removed plant garbage	19-Jan-24		Removed plant garbage
Plant snow removal	19-Jan-24		Removed snow from around back wash basin and steps
Snow Removal	19-Jan-24		Remove snow from sidewalks and back basin area.
Georgia Pump 4	19-Jan-24		Contact Shawn at Mesco about upgraded bearings and seals for pump ends.
Georgia Pump 4	19-Jan-24		Scale, degrease, and wire wheel all applicable components.
Changed HYPO hoses	19-Jan-24		Changed HYPO hoses on east/west/south hypo feed pumps
Monday Morning Meeting	22-Jan-24		Topics include check valve status (Feb. 16th), intake, Georgia comms, SCADA computers, Georgia pump 4, coverage, etc.
L.L. Bathroom	22-Jan-24		Clean toilet, urinal, shower, and floor.
Filter 4	22-Jan-24		Vacuum and wash.
Menards	22-Jan-24		Purchase dish soap, flints, power strips, etc.
Filter 3	22-Jan-24		Vacuum filter media.
Filter 4	22-Jan-24		Plug primary openings, drill out 8 secondary openings, and wash.
Kohler Reservoir	22-Jan-24		Reset SCADA communications.
Checked plant Feed pumps	22-Jan-24		Maintenance check on plant chemical feed pumps
Maintenance checks Heaters	22-Jan-24		Maintenance checks on plant heaters.
Trillings hardware	22-Jan-24		Trillings hardware for striker flints
Thermostat insulation box	23-Jan-24		Installed insulation box behind thermostat on heater by No#1 filter
sodium thio barrels	23-Jan-24		Placed sodium thio barrels in chemical feed room.
Wash line brackets	23-Jan-24		Installed new wash line brackets for filter #3 and #4
Josh on main break with crew	23-Jan-24		Josh went on main break with crew on Saemann Ave
Vacuumed filters 3 & 4	23-Jan-24		Glen vacuumed sand from filter under-drain system on filters #3 and #4
Filter 3	23-Jan-24		Wash filter.
Engraved Milwaukee batteries	23-Jan-24		Engraved filter plant maintenance shop Milwaukee tool batteries
Milwaukee Batteries	23-Jan-24		Clean, label, charge, and organize: 19 M18 + 4 M12.
Filter 4	24-Jan-24		Vacuum filter media.
Trilling's	24-Jan-24		Purchase striker flint.
Dakota Supply Group	24-Jan-24		Purchase screw driver set and order 2 1/2 annular bit.
Back to summer OPS	24-Jan-24		Closed bypass to suction well and put plant back in summer OPS
Front Gate	24-Jan-24		Reset unit and check operation = okay at this time.
Filter 4	24-Jan-24		Wash and check media remains.
Filter 4	24-Jan-24		Drill hole in South/East section and wash.
Reservoir checks	24-Jan-24		Checked reservoirs and filled reagents at Wilgus, Erie, Taylor Hill, Georgia
Laboratory and Operations Floor	25-Jan-24		Sweep and mop laboratory and operations floors.
Filter 4	25-Jan-24		Wash filter and check media intrusion.
Filter 4	25-Jan-24		Plug 2 primary holes and drill 4 secondary holes South East section.
Dan Operating 1st	25-Jan-24	26-Jan-24	Dan covering first shift for Glen.
Joshua Covering 2nd Shift	26-Jan-24	29-Jan-24	Joshua covering 2nd shift for Jeff.
Dan 1st shift for Tyler	26-Jan-24	27-Jan-24	Dan covering 1st shift operations for Tyler
Dan covering Lab	26-Jan-24	27-Jan-24	Dan covering lab ops
Joshua off for Coverage	29-Jan-24	30-Jan-24	Joshua off for covering 2nd shift
Georgia reservoir	29-Jan-24		Replaced HYPO reagents at Georgia pump station
Horizon tower	29-Jan-24		Checked reagents and tower at Horizon
South basin Floccs	29-Jan-24		Greased south basin floccs
East HYPO analyzers	29-Jan-24		Filled reagents on East basin Hypo analyzer
Monday Ops meeting	29-Jan-24		Monday operations update meeting
light bulb replacement	30-Jan-24		Replaced light bulbs in pipe gallery by filter #1 and filter #3
T-8 bulbs pipe gallery	30-Jan-24		Replaced T-8 light bulbs by filter #2
Replaced light fixture	30-Jan-24		Replaced seal tight light fixture by west basin flocc drives in pipe gallery
Trash Out	31-Jan-24		Remove plant garbage.
Pump 4 Assembly	31-Jan-24		Press end bearings into housing and test fit components.
Georgia Ave.	31-Jan-24		Drop off pump 4 impellor, parts, and tools.
Georgia Ave.	31-Jan-24		Begin cleaning pump housing.