

March 2022

OPERATIONS' DEPARTMENT MONTHLY REPORT

PUMPAGE	HIGH LIFT		LOW LIFT		2022 VS 2021
	2021	2022	2021	2022	HL
Total in MG	368.991	363.196	368.518	363.783	-1.57%
Daily Average (MG)	11.903	11.735	11.888	11.735	
Max. Day (MG)	13.954	12.938	13.867	13.046	2022 VS 2020
					HL
Gal/KwH	1,194	1,192	5,047	4,832	5.41%
ELECTRICAL COSTS					
A. Pumping:	2021		2022		
	KwH	\$	KwH	\$	
High Lift	305,456	\$22,289.32	302,349	\$22,443.33	
Low Lift	72,615	\$5,298.76	74,889	\$5,559.01	
Wash Pump 1	2,800	\$204.32	2,800	\$207.84	
Georgia St. Bstr.	49,800	\$4,521.58	51,600	\$5,044.52	
Wilgus Ave. Bstr.	3,100	\$381.44	3,500	\$470.30	
EE Pit / Bstr.	6,397	\$740.18	6,357	\$814.50	
Erie Ave. Bstr.	12,400	\$1,901.06	0	\$0.00	\$/KwH
Sub Total	452,568	\$35,336.66	441,495	\$34,539.51	0.2%
B. Treat./Fiscal/Misc.	2021		2022		
	KwH	\$	KwH	\$	
Office & Maint. Bldg.	4,026	\$364.07	3,910	\$407.83	
Filter Plant / Pump Station / 2nd Service	58,329	\$4,866.53	63,362	\$5,197.94	
Sub Total	62,355	\$5,230.60	67,272	\$5,605.77	\$/KwH -0.7%
C. Distribution:	2021		2022		
	KwH	\$	KwH	\$	
Taylor Hill Tank	2,495	\$304.69	2,529	\$339.83	
Kohler Meter Pit	0	\$0.00	0	\$0.00	
EE Tower	943	\$127.39	1,957	\$271.43	
Washington (PRV) Pit	1,423	\$192.33	1,509	\$223.04	
Sub Total	4,861	\$624.41	5,995	\$834.30	\$/KwH
Total Electrical Costs	519,784	\$41,191.67	514,762	\$40,979.58	0.5%
Electrical Cost / MG		\$111.63		\$112.64	
NATURAL GAS COSTS	2021		2022		
	CCF Used	Cost	CCF Used	Cost	
Production Facility	1,969	\$938.11			
South Basin	2,477	\$1,361.11	3,083	\$1,892.74	
Georgia St. Bstr.	110	\$107.85			
Erie Ave. Bstr.	270	\$179.44	362	\$255.20	
Wilgus Ave. Bstr.					
Office & Maint. Bldg.	950	\$519.37	941	\$584.53	\$/CCF
Total Natural Gas Costs	5,776	\$3,105.88	4,386	\$2,732.47	15.9%
Natural Gas Cost / MG		\$8.42		\$7.51	
CHEMICAL COSTS	2021		2022		
	Lbs. Used	Cost	Lbs. Used	Cost	
Alum	70,862	\$10,026.97	68,226	\$12,383.02	28.3%
Carbon	0	\$0.00	0	\$0.00	#DIV/0!
Chlorine	6,572	\$4,534.68	7,018	\$10,386.64	114.5%
Fluoride	1,731	\$1,881.60	1,856	\$2,579.84	27.9%
KMnO4	0	\$0.00	0	\$0.00	#DIV/0!
Cationic Polymer	1,208	\$1,872.40	1,417	\$2,196.97	0.0%
Liquid Phosphate	2,789	\$3,687.06	3,479	\$5,489.86	19.4%
Total Chemical Costs		\$22,002.71		\$33,036.33	50.1%
Chemical Cost / MG		\$59.63		\$90.81	
Grand Total		\$66,300.26		\$76,748.38	15.76%
Total Cost / MG		\$179.68		\$210.97	17.41%

YTD HL 2022 vs 2021	2.29%	YTD HL HIGH DAY PUMPAGE	13.987	February 17, 2022
YTD HL 2022 vs 2020	1.70%	YTD HL LOW DAY PUMPAGE	7.587	January 1, 2022

NOTE:

Electrical costs include an Alliant Energy 8.3% rate increase approved by PSC.
Not all WPS bills available.

YTD HL Ave Day	
2022	12.036
2021	11.752
2020	11.693

COMPARATIVE SUMMARY OF PLANT OPERATIONS

March 2021

vs

March 2022

Pumping Record

High Lift

Low Lift

	2021	2022	Diff.		2021	2022	Diff.
Tot. Water in MG	368.991	363.196	-1.57%	Tot. Water in MG	368.518	363.783	-1.28%
Daily Average	11.903	11.735	-1.41%	Daily Average	11.888	11.735	-1.29%
Maximum Day	13.954	12.938	-7.28%	Maximum Day	13.867	13.046	-5.92%
Minimum Day	7.925	9.904	24.97%	Minimum Day	8.158	9.979	22.32%
By Natural Gas	4.298	3.474	-19.17%	By Natural Gas	2.019	1.939	-3.96%
Power in KWH	305,456	302,349	-1.02%	Power in KWH	72,615	74,889	3.13%
Gals. per KWH	1,194	1,192	-0.19%	Gals. per KWH	5,047	4,832	-4.27%
Power \$ / KWH	\$0.07297	\$0.07423	1.73%	Power \$ / KWH	----	----	----
Power \$ / MG	\$60.41	\$61.69	\$1.28	Power \$ / MG	\$14.38	\$15.28	\$0.90
Tot. Power \$/MG	\$112.24	\$113.89	\$1.65	Tot. Power \$/MG	----	----	----

Treatment Chem.

Lbs. Used

Cost

Total Lbs.	2021	2022	Diff.	Total Cost	2021	2022	Diff.
Alum	70,862	68,226	-3.72%	Alum	\$10,026.97	\$12,383.02	\$2,356.05
Carbon			#DIV/0!	Carbon	\$0.00	\$0.00	\$0.00
Chlorine	6,572	7,018	6.79%	Chlorine	\$4,534.68	\$10,386.64	\$5,851.96
KMnO4	0	0	#DIV/0!	KMnO4	\$0.00	\$0.00	\$0.00
Polymer	1,208	1,417	17.33%	Polymer	\$1,872.40	\$2,196.97	\$324.57
Liquid Phosphate	2,789	3,479	24.74%	Liquid Phosphate	\$3,687.06	\$5,489.86	\$1,802.80
Lb/ MG:				Cost / MG:			
Alum	192.3	187.5	-2.47%	Alum	\$27.21	\$34.04	\$6.83
Carbon	0.0	0.0	#DIV/0!	Carbon	#DIV/0!	#DIV/0!	#DIV/0!
Chlorine	17.8	19.3	8.18%	Chlorine	\$12.31	\$28.55	\$16.25
KMnO4	0.0	0.0	#DIV/0!	KMnO4	#DIV/0!	#DIV/0!	#DIV/0!
Liquid Phosphate	7.6	9.6	26.36%	Liquid Phosphate	\$10.01	\$15.09	\$5.09

Fluoride:	2021	2022		Fluoride:	2021	2022	
Total Lbs.	1,731	1,856	7.22%	Cost	\$1,881.60	\$2,579.84	\$698.24
mg/l applied as F	0.67	0.67		Cost/MG	\$5.11	\$7.10	\$1.99
Av. Res. Pit. Tap	0.70	0.67					

Water Quality:

Raw

TAP

	2021	2022
Turbidity	13.10	7.80
pH	8.25	8.24
Alkalinity	114.8	114.0
MF (E-Coli)	2.1	4.6
Temperature	37.6	35.0
Wash-H2O % /LL	1.85	1.77
Av. Flt. Run/hrs	141.3	148.9
Av. ROF / MG	1.35	1.32

	2021	2022
Turbidity	0.028	0.060
pH	7.59	7.54
Alkalinity	102.7	102.7
Plate Count	0.00	0.00
Colilert	0	0
Temp.	38.9	36.2
Cl Res.	0.86	0.84

Natural Gas:

	2021	2022		2021	2022	Diff.
Nat. Gas Heating	1,893	2,700	Plant & South Basin	\$2,425.48	#DIV/0!	#DIV/0!
Nat. Gas Pumping	585	383		\$29.54	#DIV/0!	#DIV/0!

	CCF	Cost	Natural Gas Cost	Natural Gas CCF
#3 Gas Pump	117.8	#DIV/0!	\$1,892.74	3,083
#4 Gas Pump	4.5	#DIV/0!		
#7 Gas Pump	105.0	#DIV/0!		
Electric Generator	156.0	#DIV/0!		
Pumping totals	383.3	#DIV/0!		

March 2022

	4/1/2022	3/1/2022	
% Run	Elapsed Time:		
57.4%	No. 6 Pump	66,041.4	65,614.1 427.3
3.08%	Wash Pump Meter	5,396.99	5,374.11 22.88
0.6%	No. 7 Pump	746.6	742.4 4.2
0.3%	No. 8 Pump	59,535.6	59,533.6 2.0
99.2%	No. 9 Pump	18,204.0	17,466.0 738.0
0.0%	Wash Pump 2	0	0 0
	No. 1 Prime Pump	1,039.7	1,038.7 1.0
	No. 2 Prime Pump	1,109.3	1,107.7 1.6

Kw/Hr run	Watt-hour Meters:		
122.4	Wash Pump 1	1247.1	1243.1 2,800
60.1	No. 9 Pump	5426.94	5382.57 44,369
0.0	No. 8 Pump	6834.4	6834.4 0
71.4	No. 6 Pump	10236.3	10127.3 30,520
#DIV/0!	Wash Pump 2	0	0 0
#DIV/0!	No. 1 Pump	8716.245	8716.245 0
239.2	No. 2 Pump	4732.581	4725.403 7,178
296.2	No. 3 Pump	9688.486	9599.853 88,633
#DIV/0!	No. 4 Pump		0
479.9	No. 5 Pump	9,502.803	9,296.265 206,538

Garage (MWatt/Hrs.)	1,053.09	1,050.83	2,260
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Power Co. (Step #3)	35,463	35,093	444,000
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Left Meter - OUTSIDE

Volume Used:

Nat. Gas (Correct)	44,488,237	44,285,900	254,338
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% Run	Elapsed Time:		
0.0%	No. 1 Pump	16,163.5	16,163.5 0.0
4.0%	No. 2 Pump	20,199.27	20,169.26 30.01
40.2%	No. 3 Elec. Pump	33,673.3	33,374.1 299.2
0.5%	No. 3 Nat. Gas Pump	521.7	517.9 3.8
0.0%	No. 4 Elec. Pump	0.00	0.00 0.0
0.0%	No. 4 Nat. Gas Pump	1,697.3	1,697.2 0.1
57.8%	No. 5. Pump	19,875.310	19,444.930 430.380
0.2%	UV Building Generator	118.9	117.4 1.5

	4/1/2022	3/1/2022	
SLUDGE No. 1 Hour Meter	0.0	0.0	0
SYSTEM No. 2 Mag Meter	3,818,690	3,403,699	414,991
Recycle Meter (Reset to zero each month)			414,991

Power Cost	\$0.0742299	Bill >>>>	\$34,828.66
	0.7501	KWH >>>	469,200
Init. Chg.	\$32,958.07		
	\$	KWH	
Kohler Pit			
Horizon	\$452.67		3,252
Taylor	\$339.83		2,529
ALT. 72 Park	\$450.06		600
Geo. Ave.	\$5,044.52		51,600
Wilgus Ave.	\$470.30		3,500
EE Pit	\$814.50		6,357
EE Tower	\$271.43		1,957
Washington	\$223.04		1,509
Office	\$407.83		3,910
Erie Ave.			
Total	\$41,432.25		519,214

Low L. KWH	74,889
L.L. Cost \$	\$5,559.01
High L. KWH	302,349
H.L. Cost \$	\$22,443.33

Total Cost	\$28,002.34
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Plant Costs	\$5,197.94
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SUMMARY

	HIGH LIFT		LOW LIFT	
	2021	2022	2021	2022
Tot. Pump	368,991	363,796	368,518	363,783
Daily Ave.	11.903	11.735	11.888	11.735
Max. Day	13.954	12.938	13.867	13.046
Min. Day	7.925	9.904	8.158	9.979
By Nat. Gas	4.298	3.474	2.019	1.939
Power KWH	305,456	302,349	72,615	74,889
Gals/KWH	1194	1192	5047	4832
Cost/KWH	\$0.07297	\$0.07423	*****	*****
Cost/MG	\$60.41	\$61.69	\$14.38	\$15.28
Tot. Cost/MG	\$112.24	\$113.89	*****	*****

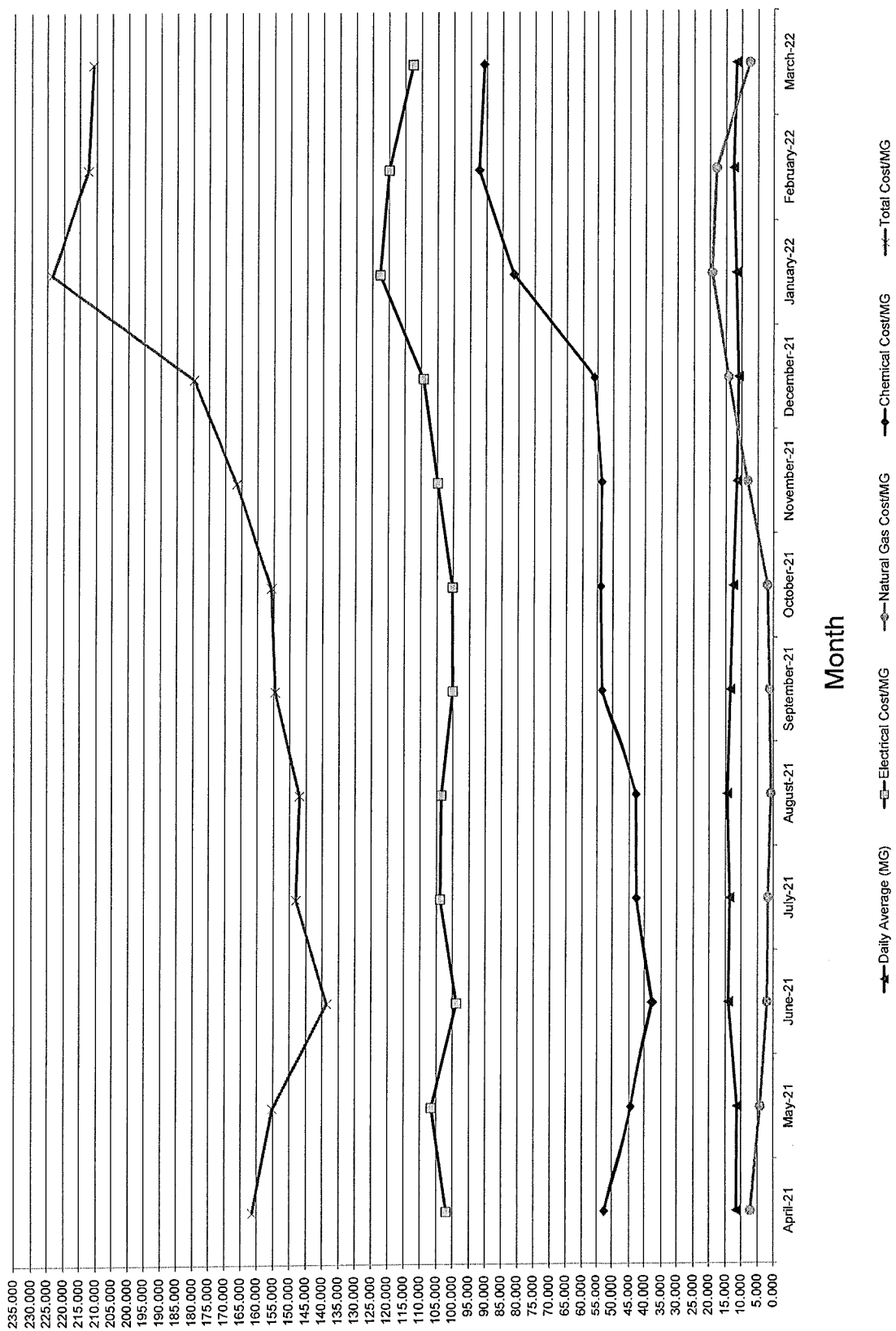
HIGH LIFT DELIVERY QUARTERLY REPORT 2022

I. FIRST QUARTER Jan - Feb - Mar		GALLONS	COST \$	\$/MG
	2021	1,055,591,000	\$181,125.65	\$171.59
	2022	1,079,805,000	\$233,346.76	\$216.10
	Percent Difference	2.29%	28.83%	25.94%
II. SECOND QUARTER Apr - May - Jun		GALLONS	COST \$	\$/MG
	2021	1,115,308,000	\$168,613.25	\$151.18
	2022	0	\$0.00	#DIV/0!
	Percent Difference	-100.00%	-100.00%	#DIV/0!
III. THIRD QUARTER Jul - Aug - Sep		GALLONS	COST \$	\$/MG
	2021	1,275,383,000	\$191,262.23	\$149.96
	2022	0	\$0.00	#DIV/0!
	Percent Difference	-100.00%	-100.00%	#DIV/0!
IV. FOURTH QUARTER Oct - Nov - Dec		GALLONS	COST \$	\$/MG
	2021	1,076,367,000	\$179,773.03	\$167.02
	2022	0	\$0.00	#DIV/0!
	Percent Difference	-100.00%	-100.00%	#DIV/0!
YEAR TO DATE : 2022		GALLONS	COST \$	\$/MG
ELECTRICITY CHEMICALS NATURAL GAS	2021	4,522,647,000	\$720,774.16	\$159.37
	2022	1,079,805,000	\$233,346.76	\$216.10
	Percent Difference	-76.12%	-67.63%	35.60%
YEAR TO DATE : 2022		GALLONS	COST \$	
SLUDGE DISPOSAL to WWTP	2021	4,225,349	\$45,410.11	
	2022	1,027,730	\$9,237.78	
	Percent Difference	-75.68%	-79.66%	
STORM WATER CHARGES	2022	NA	\$0.00	
HIGH LIFT SYSTEM DELIVERY :				
	Maximum Pumpage Day	13,987,000	February 17, 2022	
	Minimum Pumpage Day	7,587,000	January 1, 2022	

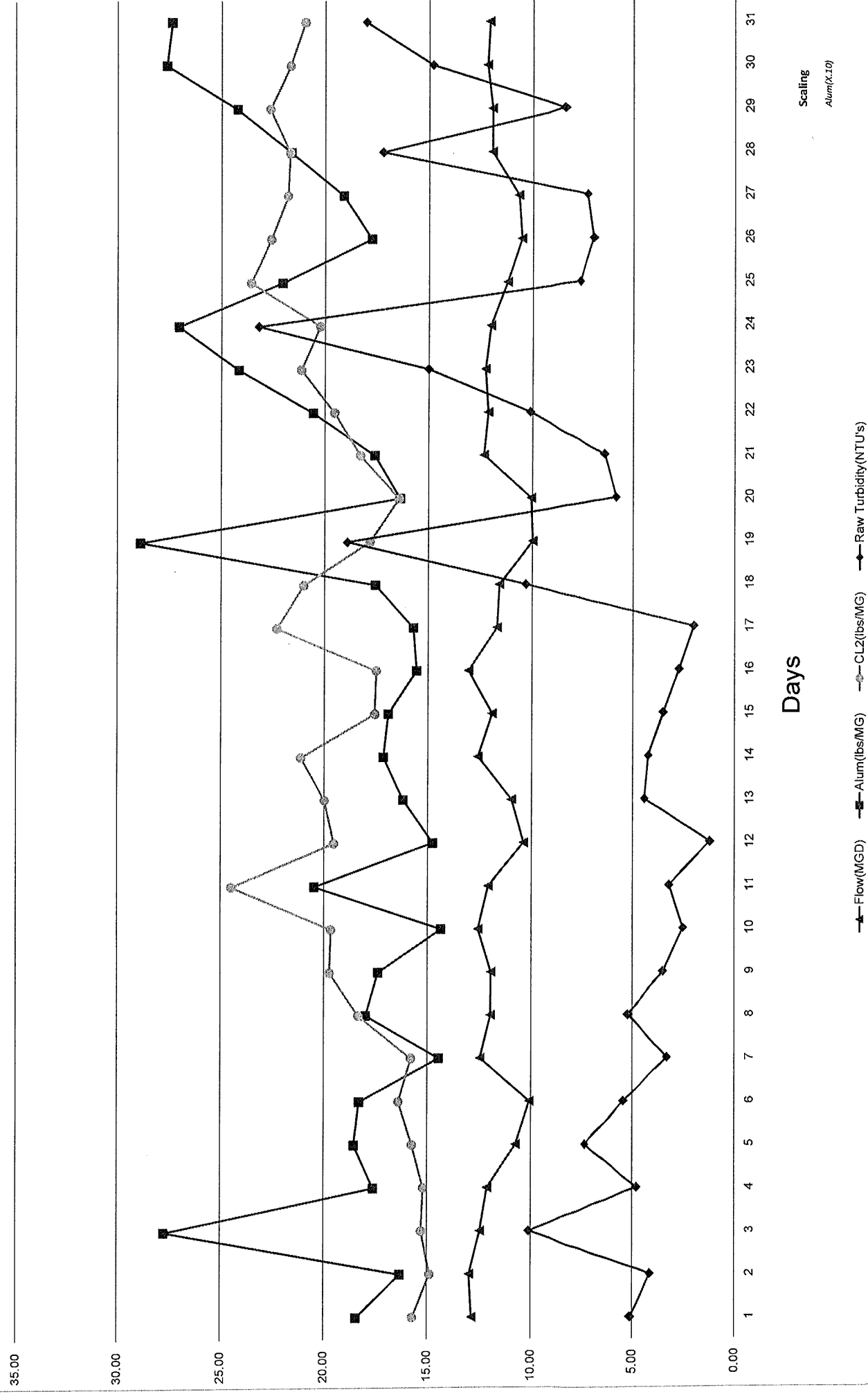
	MG	\$	\$/MG
2021	4,522,647,000	\$720,774.16	\$159.37
2022	1,079,805,000	\$233,346.76	\$216.10

NOTE: Monthly sludge disposal costs do not reflect the current actual monthly sludge discharge total to date.
 Filtrate discharges from Spring/Fall sludge disposal operations are included in treatment plant sludge disposal costs.
 Spring/Fall basin sludge/residual solids volumes and disposal costs are contract work.
 Sludge disposal costs are not included in \$/MG.

Plant Operations: Expense Report



March 2022: Sheboygan Water Utility Plant Operations Summary



Filter Plant Maintenance Completed For March 2022

Subject	Start Date	End Date	Description	Yellow indicates days operating or running labs
Dakota Supply Group	1-Mar-22		Concrete to threaded rod nut combo; tap-con with nut on the hex end.	
Menards	1-Mar-22		Purchase H.L. lights, hangers, fasteners, eyelets, outlets, etc.	
H.L. Lights	1-Mar-22		Continue working on H.L. lights	
Dakota Supply Group	2-Mar-22		Purchase 14 gauge wire for H.L. light install.	
H.L. Lights	2-Mar-22		Begin running new wiring from box to sink area.	
H.L. Lights	3-Mar-22		Install light switch, outlet, and continue sub-level install.	
Filter Plant Floor and Garbage	4-Mar-22		Wash filter plant floor and take out garbage.	
Menards	4-Mar-22		Purchase electrical supplies and more light hanging components.	
Dakota Supply Group	4-Mar-22		Purchase more label maker tape; 1/2 vinyl.	
H.L. Sub Level Lights	4-Mar-22		Continue hanging sub level lights.	
Phosphate Analyzer	10-Mar-22		Mix and install new reagents.	
Dan Operating 1st	10-Mar-22	10-Mar-22	Dan operating 1st shift.	
H.L. Wiring	10-Mar-22		Continue wiring H.L. center lights and outlets.	
Operator Lunch Room and Front Hall	11-Mar-22		Throw out garbage, sweep, and mop floors.	
H.L. Sub Level	11-Mar-22		Remove dirt, wood chunks, old wiring, rusted conduit, etc. from sub level.	
H.L. Lighting Circuit	11-Mar-22		Connect wiring to breaker box on South wall and install conduit covers.	
H.L. Sub Level Wiring	11-Mar-22		Complete H.L. sub level wiring install.	
Menards	14-Mar-22		Purchase electrical pull tape, voltage tester, scotch tape, etc.	
Monday Meeting	14-Mar-22		Raw water improvement, high lift plumbing service, SCADA upgrade, coverage, etc.	
H.L. Sub-level Ladder	14-Mar-22		Mount sub level ladder to the wall and install foot board.	
Sheboygan Chevy	14-Mar-22		Pickup 6 after airbag TSB repair.	
Sub-level Plumbing	14-Mar-22		Begin game planning sub-level plumbing repair and/or replacement.	
H.L. Engine 3	16-Mar-22		Snug coupling, degrease engine, and check for leaks.	
H.L. Plumbing	16-Mar-22		Test heat exchanger drain plumbing.	
H.L. Plumbing	16-Mar-22		Test valves, plumbing as it stands, free globe valves, etc.	
Dakota Supply Group	18-Mar-22		Price and availability on 1 1/2" copper for high lift RP2 job.	
Wilgus Ave.	18-Mar-22		Remove plugs from engine, lube cylinders, attach trickle charger, and collect laboratory sample.	
Pictures of Engine 3	18-Mar-22		Submit pictures of gas engine 3 and contact vendor for seal and gasket pricing.	
Georgia Ave.	18-Mar-22		Grease motors/pumps, inspect grounds, etc.	
Menards	18-Mar-22		10w30 oil, gloves, check 1 1/2" copper pricing, and purchase wood glue.	
Erie Ave.	18-Mar-22		Fill coolant, grease motors/pumps/checks, and identify oil for use in generator.	
Horizon Ave.	21-Mar-22		Reset SCADA, check battery backup, and walk grounds.	
Wilgus Ave.	21-Mar-22		Reset SCADA, turn over engine, check battery charger, and inspect battery backup.	
Taylor Hill	21-Mar-22		Reset SCADA, check battery backup, and inspect grounds.	
Erie Ave.	21-Mar-22		Reset SCADA, fill generator with 5 quarts 10w30, and replace reagents.	
CAT Engine 3	21-Mar-22		Continue communicating with CAT part department concerning gasket issues.	
Georgia Ave.	21-Mar-22		Install new battery backup battery and reset SCADA.	
Monday Meeting	21-Mar-22		SCADA upgrade, reservoir communication issues, battery backup checks, coverage, CPR training, etc.	
Wash Tank	22-Mar-22		Climb water tank, check antenna, and reset ethernet.	
Filter Plant Garbage	22-Mar-22		Throw out filter plant garbage and recycling.	
East and West Hypo Meters	22-Mar-22		Cleaned and calibrated both East and West hypo meters.	
South Hypo Meters	22-Mar-22		Cleaned and calibrated both south hypo meters.	
Drain by Ortho Fill	23-Mar-22		Inspect drain by ortho fill pipe for water.	
UPS Excel Sheet Update	25-Mar-22		Enter valid data on UPS excel spreadsheet.	
South Basin	28-Mar-22		Perform south basin cycle, drain basin, and rinse floc towers/walls.	
Sample Pumps	28-Mar-22		Check pricing and availability on repair kite; they are still 1 month out.	

West Sample Pump	28-Mar-22	Replace West sample pump with new assembly.
Monday Meeting	28-Mar-22	South basin sludge removal, RPZ service this week, West sample pump leak, etc.
Pump 6 Priming Pot	29-Mar-22	Remove priming pot, check internal mechanisms, and clean vacuum orifice; pump shell needs removal to check impellor for debris.
South Basin Flocs	29-Mar-22	Enter South basin, check floc paddles, grease saddle bearings, and inspect wearing components.
Enter South Basin for Sludge Removal	29-Mar-22	Perform South basin sludge service.
Collect Information Submit POs	30-Mar-22	Gather parts information and submit POs for CAT repair and ortho transfer pump.
Menards	30-Mar-22	Purchase 1/2" impact extension and 2" copper fittings for high lift repair.
Pump 6 Valves	30-Mar-22	Open, cycle, and close pump 6 intake and discharge valves.
Pump 6	30-Mar-22	Remove bonnet and pull piece of wood from the inside.
Maintenance Tools	31-Mar-22	Cleaned maintenance tools in low and high lift areas.
High Lift 3/4	31-Mar-22	Checked wiring during hour meter diagnostic process.
High Lift Floor	31-Mar-22	Swept high lift floor.
High Lift Pump 4	31-Mar-22	Install new hour meter, checked connections, and glued wire loom to interior panel.