

July 2022

OPERATIONS' DEPARTMENT MONTHLY REPORT

PUMPAGE	HIGH LIFT		LOW LIFT		2022 VS 2021
	2021	2022	2021	2022	HL
Total in MG	422.933	418.679	422.275	425.837	-1.01%
Daily Average (MG)	13.643	13.526	13.622	13.737	
Max. Day (MG)	17.207	17.388	17.138	17.630	2022 VS 2020
					HL
Gal/KwH	1,192	1,323	5,033	4,931	2.50%
ELECTRICAL COSTS					
A. Pumping:	2021		2022		
	KwH	\$	KwH	\$	
High Lift	351,501	\$26,069.65	310,922	\$25,097.75	
Low Lift	83,902	\$6,222.73	85,914	\$8,935.01	
Wash Pump 1	2,100	\$155.75	2,800	\$226.02	
Georgia St. Bstr.	50,700	\$4,878.04	53,100	\$5,446.78	
Wilgus Ave. Bstr.	2,800	\$344.60	3,100	\$416.38	
EE Pit / Bstr.	4,935	\$575.34	5,009	\$645.00	
Erie Ave. Bstr.	16,000	\$2,144.10	16,400	\$2,446.02	
Sub Total	511,938	\$40,390.21	477,245	\$41,212.96	\$/KwH 9.5%
B. Treat./Fiscal/Misc.	2021		2022		
	KwH	\$	KwH	\$	
Office & Maint. Bldg.	9,553	\$1,084.39	8,900	\$1,119.09	
Filter Plant / Pump Station / 2nd Service	52,097	\$4,471.97	96,164	\$8,358.48	
Sub Total	61,650	\$5,556.36	105,064	\$9,477.57	\$/KwH 0.1%
C. Distribution:	2021		2022		
	KwH	\$	KwH	\$	
Taylor Hill Tank	380	\$60.38	399	\$67.66	
Kohler Meter Pit	0	\$0.00	0	\$0.00	
EE Tower	239	\$44.74	1,058	\$151.82	
Washington (PRV) Pit	232	\$45.68	254	\$51.77	
Sub Total	851	\$150.80	1,711	\$271.25	\$/KwH 8.7%
Total Electrical Costs	574,439	\$46,097.37	584,020	\$60,961.78	
Electrical Cost / MG		\$108.99		\$121.54	
NATURAL GAS COSTS					
	2021		2022		
	CCF Used	Cost	CCF Used	Cost	
Production Facility	371	\$333.20			
South Basin	32	\$172.17	355	\$394.69	
Georgia St. Bstr.			29	\$41.84	
Erie Ave. Bstr.	17	\$38.87	0	\$29.59	
Wilgus Ave. Bstr.			0	\$17.33	
Office & Maint. Bldg.	252	\$186.26	320	\$262.98	
Total Natural Gas Costs	1,688	\$730.50	704	\$746.43	\$/CCF 145.0%
Natural Gas Cost / MG		\$1.73		\$1.78	
CHEMICAL COSTS					
	2021		2022		
	Lbs. Used	Cost	Lbs. Used	Cost	
Alum	50,723	\$7,177.30	41,199	\$7,477.62	28.3%
Carbon	0	\$0.00	0	\$0.00	#DIV/0!
Chlorine	9,715	\$7,946.87	8,014	\$11,860.72	80.9%
Fluoride	2,349	\$2,553.36	2,046	\$2,843.94	27.9%
KMnO4	0	\$0.00	0	\$0.00	#DIV/0!
Cationic Polymer	0	\$0.00	0	\$0.00	#DIV/0!
Liquid Phosphate	3,549	\$4,691.78	5,135	\$8,103.03	19.4%
Total Chemical Costs		\$22,369.31		\$30,285.31	35.4%
Chemical Cost / MG		\$52.89		\$72.23	
Grand Total		\$69,197.18		\$81,993.51	18.49%
Total Cost / MG		\$163.61		\$195.54	19.52%

YTD HL 2022 vs 2021	0.77%	YTD HL HIGH DAY PUMPAGE	17.388	July 19, 2022	
YTD HL 2022 vs 2020	10.56%	YTD HL LOW DAY PUMPAGE	7.587	January 1, 2022	
				YTD HL Ave Day	

NOTE:

Electrical costs include an Alliant Energy 8.3% rate increase approved by PSC.
all WPS bills available.

New YTD HL Day Pumpage 17.388MGD on July 19th

Not

2022	12.235
2021	12.252
2020	11.108

COMPARATIVE SUMMARY OF PLANT OPERATIONS

July 2021

vs

July 2022

Pumping Record

High Lift

	2021	2022	Diff.
Tot. Water in MG	422.933	418.679	-1.01%
Daily Average	13.643	13.526	-0.86%
Maximum Day	17.207	17.388	1.05%
Minimum Day	9.929	10.032	1.04%
By Natural Gas	3.808	7.813	105.17%
Power in KWH	351,501	310,922	-11.54%
Gals. per KWH	1,192	1,323	11.03%
Power \$ / KWH	\$0.07417	\$0.08072	8.83%
Power \$ / MG	\$61.64	\$59.85	(\$1.79)
Tot. Power \$/MG	\$104.01	\$121.86	\$17.85

Low Lift

	2021	2022	Diff.
Tot. Water in MG	422.275	425.837	0.84%
Daily Average	13.622	13.737	0.84%
Maximum Day	17.138	17.630	2.87%
Minimum Day	9.878	10.294	4.21%
By Natural Gas	0.000	2.173	#DIV/0!
Power in KWH	83,902	85,914	2.40%
Gals. per KWH	5,033	4,931	-2.02%
Power \$ / KWH	----	----	----
Power \$ / MG	\$14.74	\$16.29	\$1.55
Tot. Power \$/MG	----	----	----

Treatment Chem.

Lbs. Used

	2021	2022	Diff.
Total Lbs.			
Alum	50,723	41,199	-18.78%
Carbon			#DIV/0!
Chlorine	5,120	8,014	56.52%
KMnO4	0		#DIV/0!
Polymer	0		#DIV/0!
Liquid Phosphate	3,549	5,135	44.69%
Lb/ MG:			
Alum	120.1	96.7	-19.46%
Carbon	0.0	0.0	#DIV/0!
Chlorine	12.1	18.8	55.21%
KMnO4	0.0	0.0	#DIV/0!
Liquid Phosphate	8.4	12.1	43.48%

Cost

	2021	2022	Diff.
Total Cost			
Alum	\$7,177.30	\$7,477.62	\$300.32
Carbon	\$0.00	\$0.00	\$0.00
Chlorine	\$3,532.80	\$11,860.72	\$8,327.92
KMnO4	\$0.00	\$0.00	\$0.00
Polymer	\$0.00	\$0.00	\$0.00
Liquid Phosphate	\$4,691.78	\$8,103.03	\$3,411.25
Cost / MG:			
Alum	\$17.00	\$17.56	\$0.56
Carbon	#DIV/0!	#DIV/0!	#DIV/0!
Chlorine	\$8.37	\$27.85	\$19.49
KMnO4	#DIV/0!	#DIV/0!	#DIV/0!
Liquid Phosphate	\$11.11	\$19.03	\$7.92

Fluoride:

	2021	2022	Diff.
Total Lbs.	2,349	2,046	-12.90%
mg/l applied as F	0.72	0.72	
Av. Res. Plt. Tap	0.73	0.70	

Fluoride:

	2021	2022	Diff.
Cost	\$2,553.36	\$2,843.94	\$290.58
Cost/MG	\$6.05	\$6.79	\$0.74

Water Quality:

Raw

	2021	2022
Turbidity	2.30	1.00
pH	8.32	8.35
Alkalinity	108.5	108.6
MF (E-Coli)	8.4	0.3
Temperature	59.8	50.1
Wash-H2O % /LL	1.78	2.02
Av. Flt. Run/hrs	118.9	112.7
Av. ROF / MG	1.46	1.40

TAP

	2021	2022
Turbidity	0.041	0.066
pH	7.70	7.74
Alkalinity	101.9	102.7
Plate Count	0.00	0.00
Colilert	0	0
Temp.	62.8	52.8
Cl Res.	0.87	0.89

Natural Gas:

	2021	2022	
Nat. Gas Heating	1,893	-430	Plant & South Basin
Nat. Gas Pumping	585	785	

	2021	2022	Diff.
	\$959.01	#DIV/0!	#DIV/0!
	\$943.83	#DIV/0!	#DIV/0!

	CCF	Cost	Natural Gas Cost	Natural Gas CCF
#3 Gas Pump	133.3	#DIV/0!	\$394.69	355
#4 Gas Pump	423.0	#DIV/0!		
#7 Gas Pump	102.5	#DIV/0!		
Electric Generator	126.0	#DIV/0!		
Pumping totals	784.8	#DIV/0!		

July 2022

% Run
80.2%
3.52%
0.6%
0.6%
98.7%
1.1%

	8/1/2022	7/1/2022	
Elapsed Time:			
No. 6 Pump	68,058.4	67,461.9	596.5
Wash Pump Meter	5,479.58	5,453.42	26.16
No. 7 Pump	765.6	761.5	4.1
No. 8 Pump	59,540.3	59,535.6	4.7
No. 9 Pump	21,110.0	20,376.0	734.0
Wash Pump 2	31	23	8
No. 1 Prime Pump	1,042.5	1,042.2	0.3
No. 2 Prime Pump	1,115.2	1,113.8	1.4

Kw/Hr run
107.0
57.7
148.9
71.8
128.2
539.0
236.4
#DIV/0!
#DIV/0!
479.6

Wathour Meters:			
Wash Pump 1	1260.1	1256.1	2,800
No. 9 Pump	5595.12	5552.75	42,374
No. 8 Pump	6836.4	6834.4	700
No. 6 Pump	756.2	603.2	42,840
Wash Pump 2	3,3089	2,454	1,026
No. 1 Pump	9002.494	8858.326	144,168
No. 2 Pump	4766.938	4760.877	6,061
No. 3 Pump	9891.855	9891.855	0
No. 4 Pump			0
No. 5 Pump	10,220.221	10,059.528	160,693

Garage (MWatt/Hrs.)	1,061.72	1,061.72	0
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Power Co. (Step #3)	36,986	36,572	496,800
Left Meter - OUTSIDE			

Volume Used:			
Nat. Gas (Correct)	44,821,734	44,772,044	62,460

Elapsed Time:			
Emer. Generator	1,032.4	1,026.1	6.3

% Run
35.9%
3.4%
0.0%
0.6%
0.0%
1.3%
45.0%
0.2%

Elapsed Time:			
No. 1 Pump	16,694.6	16,427.1	267.5
No. 2 Pump	20,344.15	20,318.51	25.64
No. 3 Elec. Pump	34,362.6	34,362.6	0.0
No. 3 Nat. Gas Pump	540.2	535.9	4.3
No. 4 Elec. Pump	0.00	0.00	0.0
No. 4 Nat. Gas Pump	39.3	29.9	9.4
No. 5. Pump	21,371.180	21,036.120	335.060
UV Building Generator	127.5	126.3	1.2

	8/1/2022	7/1/2022	
SLUDGE No. 1 Hour Meter	0.0	0.0	0
SYSTEM No. 2 Mag Meter	5,278,130	4,919,530	358,600
Recycle Meter (Reset to zero each month)			358,600

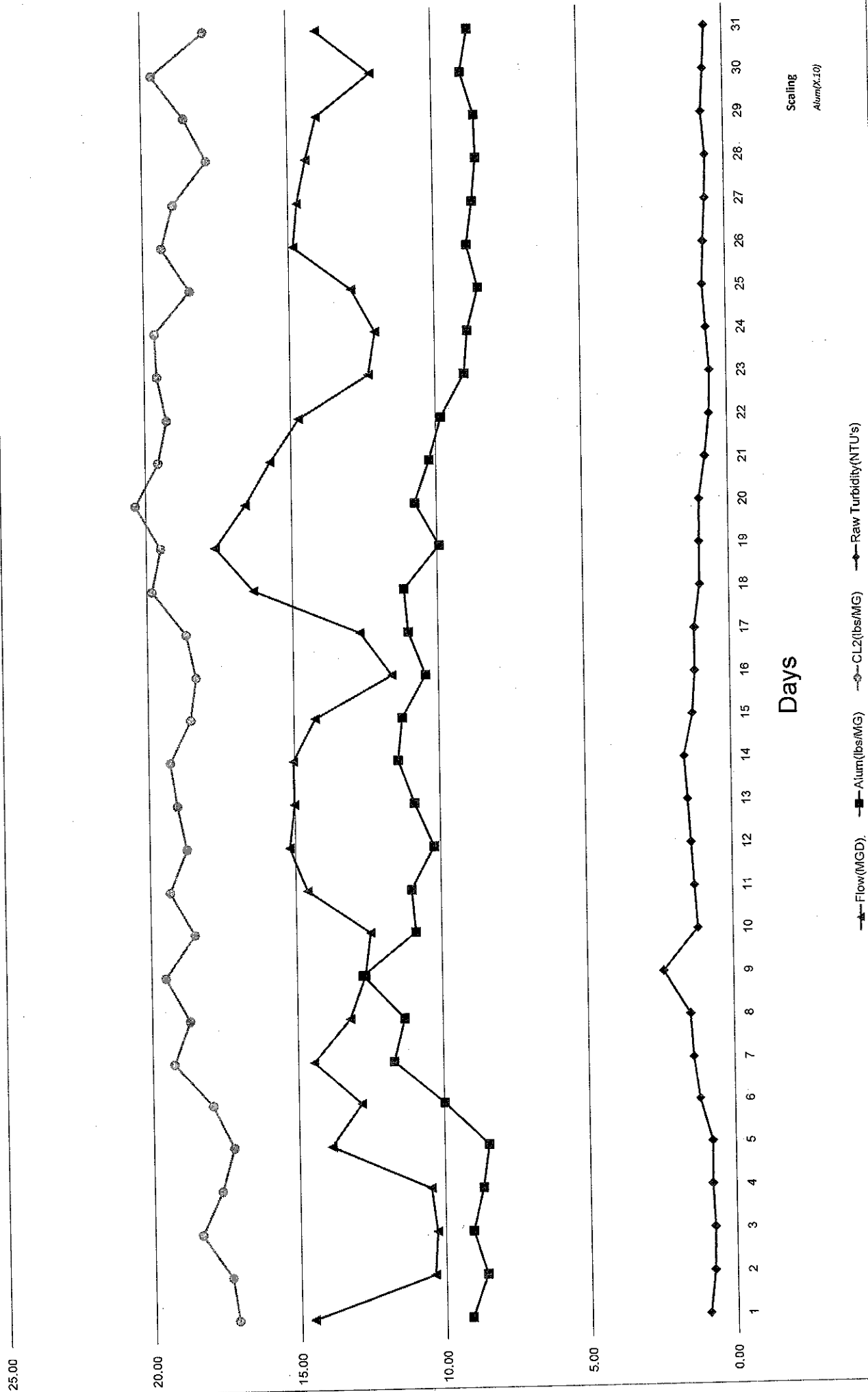
Power Cost	\$0.0807204	Bill >>>>	\$36,517.91
	0.51536	KWH >>>	452,400
Init. Chg.	\$40,101.90		
	\$	KWH	
Kohler Pit			
Horizon	\$134.77		871
Taylor	\$67.66		399
ALT. 72 Park	\$515.36		1,000
Geo. Ave.	\$5,446.78		53,100
Wilgus Ave.	\$416.38		3,100
EE Pit	\$645.00		5,009
EE Tower	\$151.82		1,058
Washington	\$51.77		254
Office	\$1,119.09		8,900
Erie Ave.	\$2,446.02		16,400
Total	\$51,096.55		586,891

Low L. KWH	85,914
L.L. Cost \$	\$6,935.01
High L. KWH	310,922
H.L. Cost \$	\$25,097.75
Total Cost	\$32,032.76
Plant Costs	\$8,358.48

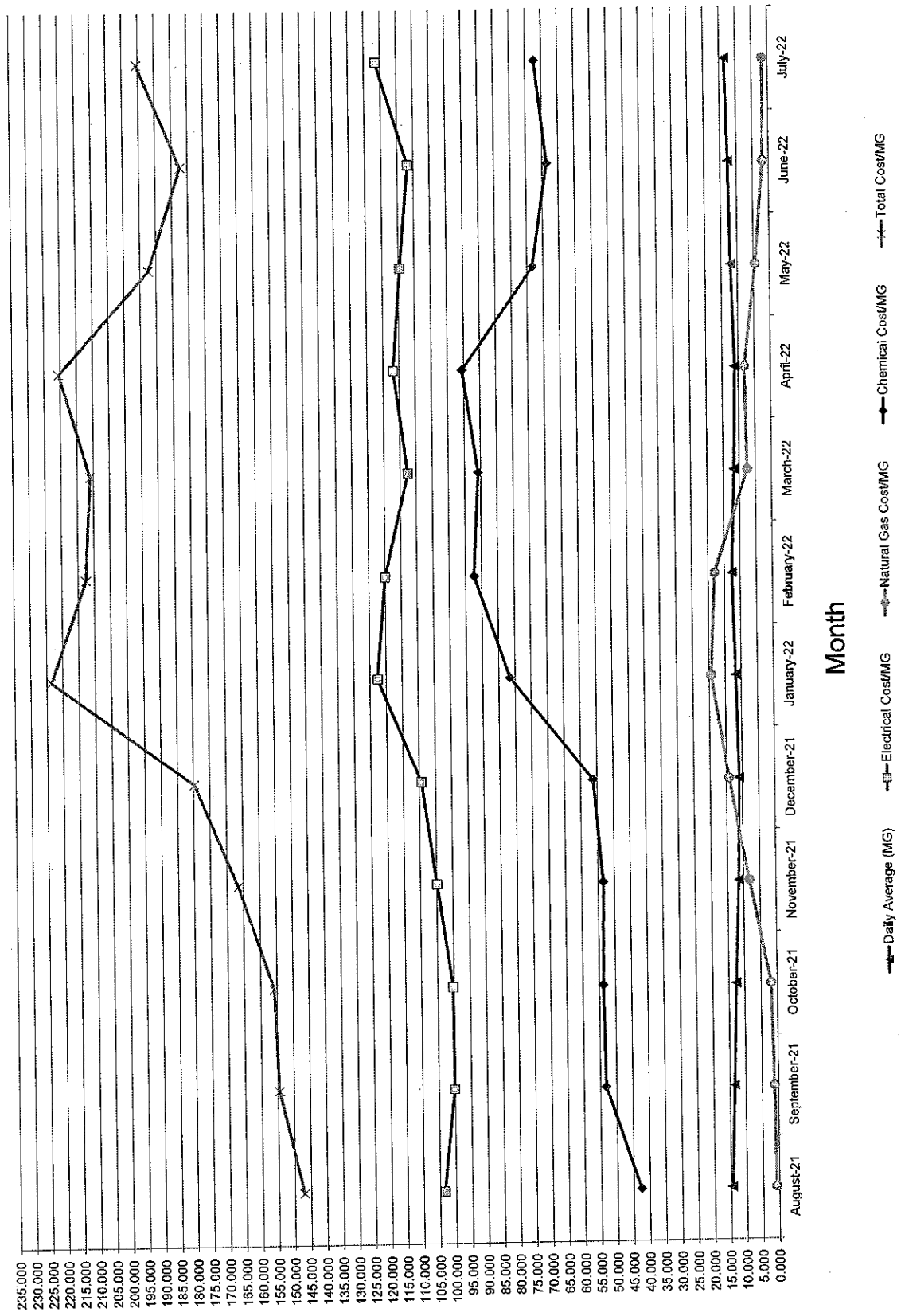
SUMMARY

	HIGH LIFT		LOW LIFT	
	2021	2022	2021	2022
Tot. Pump	422.933	419.312	422.275	425.837
Daily Ave.	13.643	13.526	13.622	13.737
Max. Day	17.207	17.388	17.138	17.630
Min. Day	9.929	10.032	9.878	10.294
By Nat. Gas	3.808	7.813	0.000	2.173
Power KWH	351,501	310,922	83,902	85,914
Gals/KWH	1192	1323	5033	4931
Cost/KWH	\$0.07417	\$0.08072	*****	*****
Cost/MG	\$61.64	\$59.85	\$14.74	\$16.29
Tot. Cost/MG	\$104.01	\$121.86	*****	*****

July 2022: Sheboygan Water Utility Plant Operations Summary



Plant Operations: Expense Report



Filter Plant Maintenance Completed For July 2022

Subject	Start Date	End Date	Description	Yellow indicates days operating or running labs
4th of July Holiday	4-Jul-22		4th of July holiday	
Utility observed holiday	4-Jul-22		Utility observed holiday	
Dan on vacation	5-Jul-22		Dan on vacation	
Joshua on Vacation	5-Jul-22			
2" Valves	6-Jul-22		Clean old 2" generator valve and place spare upstairs.	
East Floe Motor	6-Jul-22		Replace belts on N.W. floe gear and motor set.	
Dan Covering Laboratory	6-Jul-22	9-Jul-22	Dan covering laboratory for Eric.	
Joshua Operating 1st	7-Jul-22	7-Jul-22	Joshua covering 1st shift for Glen.	
UV Reference Sensor Check	8-Jul-22		Perform UV reference sensor check.	
South Basin Bathroom	8-Jul-22		Clean south basin bathroom.	
Filter Plant Garbage	8-Jul-22		Throw filter plant garbage and recycling away.	
Joshua Email/Outlook Issue	8-Jul-22		Assist On-Tech diagnosing email/outlook access issue.	
Hypo Feed Room Floor	11-Jul-22		Empty hypo feed room sump crock and clean floors.	
East Hypo Pump	11-Jul-22		Install new Viton O-rings on swing pump feed valve on East hypo line.	
Potassium Permanganate	11-Jul-22		Diagnose and adjust feed scaling; programming is off by 60%.	
Potassium Permanganate	11-Jul-22		Flush feed line, calibrate tank height, install new tube, and begin feeding.	
Joshua On-Tech Training	11-Jul-22		Complete On-Tech training.	
Monday Meeting	11-Jul-22		Coverage, potassium feed, UV reference sensor calibration, raw water project work, etc.	
Gas Engine 3	12-Jul-22		Clean up area after filter and gasket replacement.	
H.L. Garbage	12-Jul-22		Throw away garbage, old west light, and replace soap.	
Gas Engines	12-Jul-22		Assist Wayne while operating gas engines; power in units, reset meters, and walk plant looking for failures.	
End of Month Report	12-Jul-22		Create and deliver June end of month report.	
Engine 4 and 7	12-Jul-22		Clean pressure reduction screen, install new gauge on 4, and check cooling water flow.	
Dakota Supply Group	12-Jul-22		Purchase SPEARS 1/2" nipples, 1/4"-1/2" adaptors, and new D-160 psi gauge for engine 4.	
H.L. Center Light	12-Jul-22		Install new bulb on H.L. center pole.	
H.L. West Light	12-Jul-22	15-Jul-22	Install new L.E.D. light on West wall in high lift.	
Dan operating 1st shift	13-Jul-22		Dan covering 1st shift operations for Wayne and mark.	
Hypo Bulk Area	13-Jul-22		Inspect hypo bulk tank area for leaks; third tank is showing signs of leakage.	
Batteries Plus	13-Jul-22		Purchase batteries for South Basin emergency/exit lights.	
South Basin Emergency Lights	13-Jul-22		Install new batteries in south basin emergency lights.	
Filter 2	13-Jul-22		Wash filter for backwash sample.	
Engine 3 and 4	14-Jul-22		Order oil pressure senders, indicators, and cover gaskets.	
Hypo Bulk Tank	14-Jul-22		Begin exploring options for fiberglass tank repair/replacement.	
Pipe Gallery	14-Jul-22		Begin monthly maintenance and replace LED light bulb by wash pump 1.	
South Basin Exit Signs	14-Jul-22		Begin installing new south basin exit signs.	
Dakota Supply Group	14-Jul-22		Purchase emergency and exit signs for south basin.	
South Basin Emergency Lights	15-Jul-22		Finish installing new south basin emergency lights.	
High Lift NTU Meter	15-Jul-22		Install Hach NTU meter in high lift.	
Dakota Supply Group	15-Jul-22		Purchase pressure reducing valve for high lift NTU meter.	
Dan Covering Laboratory	18-Jul-22	19-Jul-22	Dan covering laboratory for Eric.	
Milwaukee Vacuum	18-Jul-22		Cleaned Milwaukee backpack vacuum.	
Rebuild Raw Water Sample Pump	18-Jul-22		Found front gasket took out impeller, left gasket out, installed 2 new 6203 bearings, impeller, and spring; didn't have new mechanical seals.	
Raw Water Sample Pump	18-Jul-22		Install rebuilt raw water sample pump.	
Menards x 2	18-Jul-22		Purchase shop towels, yellow paint, CLR, MAP gas, etc.	
Batteries Plus	18-Jul-22		Return 5x 6-volt 7 amp. batteries	
Maintenance Shop	18-Jul-22		Throw out garbage, organize shelving, locate pump bearings, clean old NTU meter parts.	
Menards	19-Jul-22		Purchase heavy fan for low lift 9 switchgear.	
Erle and Horizon Ave.	19-Jul-22		Collected laboratory samples, checked grounds, and filled hypo reagents.	
Lab Tap NTU Meter	19-Jul-22		Replaced feed hose, cleaned ortho out of feed line, and adjusted flow.	

Low Lift Cooling Water	19-Jul-22	Ortho buildup causing flow issues in cooling water lines. Cleaned lines and adjusted flow.
Diagnose East Hypo Alarm	19-Jul-22	East hypo pump has erratic feed rate, suspected air in raw water lines but air reliefs are okay, found pump 9 switch gear has issues.
Pump 9	19-Jul-22	Open switch gear and diagnose over-temp issue.
Gas engine 4 sending unit	20-Jul-22	Gas engine number 4 oil pressure sending unit and gauge replaced.
Gas engine 10 coolant air release	20-Jul-22	Gas engine 10 backup air release valve was broken and inoperable, valve was not needed so it was removed and plugged
Dakota supply group	20-Jul-22	Parts run to Dakota supply group for hoses and hose barbs
Tap NTU Meter	20-Jul-22	Completed tap NTU meter plumbing
Josh covering 1st shift Ops	21-Jul-22	Josh covering 1st shift operations
maintenance paperwork	21-Jul-22	Filling in maintenance work calendar, contacting vender information for parts
Cleaned FP bathrooms	21-Jul-22	Cleaned filter plant bathrooms
Erie pump station	21-Jul-22	Checked Erie pump station emergency generator for Monday shut operations
Taylor hill reservoir	21-Jul-22	Changed swan hypo analyzer reagent hoses
Georgia reservoir	21-Jul-22	Changed switch gear filters in Georgia pump station
Joshua on Vacation	22-Jul-22	Joshua sailing across Lake Michigan
Dan on vacation	22-Jul-22	Dan on vacation
Dan covering 3rd shift	25-Jul-22	Dan covering 3rd shift operations for Wayne
Erie Ave.	28-Jul-22	Reagents good, generator could use paint, spare reagents could be brought out, grounds good.
Horizon and Georgia Ave.	28-Jul-22	Horizon reagents and grounds good. Georgia Ave. reagents good, but cabinet filters need replaced.
Taylor Hill	28-Jul-22	Reagents need serviced and SWAN reagent fill hoses installed.
Engine 4	28-Jul-22	Plumb cover drain for filter service.
Engine 3	28-Jul-22	Install new oil pressure sender and gauge.
Truck 6	29-Jul-22	Vacuum and wash.
South Basin Bathroom and Maintenance	29-Jul-22	Clean south basin bathroom and maintenance shop.
Georgia Ave.	29-Jul-22	Wash interior floor, sweep entrance area, and inspect switch gear filters.
Erie Ave.	29-Jul-22	Deliver new reagent set.
Taylor Hill	29-Jul-22	Replace reagents, clean dehumidifier, and sweep interior.