

FAC 8311 SEWAGE TREATMENT PLANT

FY24 SUC:	\$186.27 / KG
Source:	Calculated using R.S. Means CostWorks 2023 Qtr 4 component prices

FAC 8311 SEWAGE TREATMENT PLANT

SUC \$186.27

Release 2023 Qtr 4
Zip Code Prefix 222
Type MR

UM KG
Design Life 50
Average Size 962.53383

Adjusted Occurences are the occurrences remaining after subtracting Repair/Replacement Overlaps. Overlap reduction removes a repair when it occurs the same year as a replacement.

Description	Frequency	Qty Unit	Total In-House	Total Incl OP	Design Life/Frequency	Occurrences in Design Life	Adjusted Occurrences	Life Cost	Adjusted Cost
Replace 2 H.P. compressor	25	4.00 Ea.	\$18,691.38	\$21,688.88	2.0000	2	2	\$43,377.76	\$43,377.76
Minor repairs to concrete floor unfinished	15	9,446.00 S.F.	\$360,212.08	\$439,587.65	3.3333	3	3	\$1,318,762.96	\$1,318,762.96
Repair metal stairs	15	1,166.00 S.F.	\$84,147.21	\$97,297.99	3.3333	3	3	\$291,893.96	\$291,893.96
Replace metal hand rail	30	680.00 L.F.	\$41,167.36	\$47,854.45	1.6667	1	1	\$47,854.45	\$47,854.45
Metal floor grating repairs - (2% of grating)	10	653.00 S.F.	\$21,651.59	\$26,092.70	5.0000	5	5	\$130,463.49	\$130,463.49
Unclog main drain pipe & fittings, cast iron	10	34.00 Ea.	\$1,660.60	\$2,078.78	5.0000	5	5	\$10,393.92	\$10,393.92
Unclog 4" - 12" diameter main drain per L.F.	10	17.00 L.F.	\$67.88	\$84.98	5.0000	5	5	\$424.89	\$424.89
Insp/chk pump/mtr oper, lub, chk align, rainwater sump pump	1	12.00 Ea.	\$150.71	\$188.66	50.0000	50	50	\$9,433.14	\$9,433.14
Replace rainwater sump pump / motor assembly	20	12.00 Ea.	\$7,678.42	\$9,087.64	2.5000	2	2	\$18,175.29	\$18,175.29
General maintenance pipe & fittings, industrial gas	2	12.00 M.L.F.	\$463.72	\$580.50	25.0000	25	25	\$14,512.52	\$14,512.52
Check and adjust 2 H.P. compressor	1	4.00 Ea.	\$356.12	\$445.80	50.0000	50	50	\$22,290.16	\$22,290.16
Replace 275 gallon fuel oil storage tank	30	4.00 Ea.	\$10,096.55	\$11,675.13	1.6667	1	1	\$11,675.13	\$11,675.13
Replace flanged steel pipe and fittings, 6"	75	2,260.00 L.F.	\$603,909.71	\$720,861.18	0.6667	0	0	\$0.00	\$0.00
Repack gate valve gland, 2" - 3" valves	10	32.00 Ea.	\$1,245.47	\$1,490.46	5.0000	5	5	\$7,452.31	\$7,452.31
Replace gate valve, partial, 2" - 3" valves	20	32.00 Ea.	\$67,943.59	\$77,752.90	2.5000	2	2	\$155,505.80	\$155,505.80
Repack gate valve gland, 8" - 12" valves	5	32.00 Ea.	\$5,749.16	\$6,989.25	10.0000	10	10	\$69,892.47	\$69,892.47
Replace drain valve, 3/4" valves	20	32.00 Ea.	\$2,585.42	\$3,121.33	2.5000	2	2	\$6,242.67	\$6,242.67
Repair circulator pump, 1 H.P.	5	22.00 Ea.	\$2,281.40	\$2,691.35	10.0000	10	7	\$26,913.48	\$18,839.44
Replace circulator. pump, 1 H.P.	15	20.00 Ea.	\$112,656.53	\$129,265.65	3.3333	3	3	\$387,796.94	\$387,796.94
Refill expansion tank	5	4.00 Ea.	\$62.26	\$77.94	10.0000	10	10	\$779.38	\$779.38
Repair switchboard meter	10	4.00 Ea.	\$4,874.48	\$5,736.50	5.0000	5	5	\$28,682.48	\$28,682.48
Maintenance and repair motor starter, up to 600 V	5	4.00 Ea.	\$1,051.28	\$1,277.98	10.0000	10	10	\$12,779.77	\$12,779.77
Maintenance and inspection lighting panel, indoor	3	6.00 Ea.	\$254.07	\$318.31	16.6667	16	16	\$5,092.91	\$5,092.91
Replace load center, 100 A	20	12.00 Ea.	\$14,172.36	\$17,286.42	2.5000	2	2	\$34,572.84	\$34,572.84
Repair failed breaker, molded case, 600 V, 3 pole	10	8.00 Ea.	\$2,908.60	\$3,471.91	5.0000	5	5	\$17,359.57	\$17,359.57
Maintenance and inspection circuit breaker, molded case, 600 V, 3 pole	0.33	52.00 Ea.	\$1,774.66	\$2,223.40	151.5152	151	151	\$335,732.93	\$335,732.93
Maintenance and repair safety switch, 3 pole safety switch, heavy duty	8	8.00 Ea.	\$338.75	\$424.41	6.2500	6	6	\$2,546.45	\$2,546.45
Repair smoke detector	10	4.00 Ea.	\$232.04	\$287.33	5.0000	5	5	\$1,436.65	\$1,436.65
Repair heat detector	10	4.00 Ea.	\$250.41	\$308.21	5.0000	5	5	\$1,541.04	\$1,541.04
Check and repair manual pull station	10	2.00 Ea.	\$179.77	\$221.49	5.0000	5	5	\$1,107.47	\$1,107.47
Preventive maintenance oil filter	1	3.00 Ea.	\$21.26	\$25.55	50.0000	50	50	\$1,277.67	\$1,277.67

Description	Frequency	Qty Unit	Total In-House	Total Incl OP	Design Life/Frequency	Occurrences in Design Life	Adjusted Occurrences	Life Cost	Adjusted Cost	
Replace oil filter housing	30	3.00 Ea.	\$212.60	\$255.53	1.6667	1	1	\$255.53	\$255.53	
Repair boiler, gas, 250 MBH	7	4.00 Ea.	\$11,035.52	\$12,889.63	7.1429	7	7	\$90,227.43	\$90,227.43	
Repair feed water supply pump	15	4.00 Ea.	\$23,860.78	\$27,453.13	3.3333	3	3	\$82,359.39	\$82,359.39	
Repair deaerator	10	3.00 Ea.	\$233.47	\$292.27	5.0000	5	5	\$1,461.33	\$1,461.33	
Replace deaerator	20	3.00 Ea.	\$160,726.16	\$187,666.77	2.5000	2	2	\$375,333.54	\$375,333.54	
Clean separator strainer	10	8.00 Ea.	\$6,225.91	\$7,793.76	5.0000	5	5	\$38,968.81	\$38,968.81	
Replace separator	20	8.00 Ea.	\$711,262.85	\$812,640.82	2.5000	2	2	\$1,625,281.64	\$1,625,281.64	
Minor repairs to annunciation panel	5	2.00 Ea.	\$298.83	\$365.19	10.0000	10	10	\$3,651.91	\$3,651.91	
Maintenance and repair exit light	20	2.00 Ea.	\$76.98	\$95.34	2.5000	2	2	\$190.68	\$190.68	
Replace lighting fixture exit light	20	2.00 Ea.	\$352.13	\$427.01	2.5000	2	2	\$854.03	\$854.03	
Maintenance and repair voice/data outlet	10	16.00 Ea.	\$869.17	\$1,085.47	5.0000	5	5	\$5,427.33	\$5,427.33	
Maintenance and inspection patch panel	0.5	2.00 Ea.	\$182.02	\$228.04	100.0000	100	100	\$22,804.07	\$22,804.07	
Remove and replace 50 HP pump motor	25	14.00 Ea.	\$126,218.66	\$144,198.14	2.0000	2	2	\$288,396.28	\$288,396.28	
Remove and replace steel guard rail	7	257.00 L.F.	\$17,986.77	\$20,885.26	7.1429	7	7	\$146,196.83	\$146,196.83	
Prepare & paint 100K gal. ground level water stor tank, 30' dia x 19' tall	10	1.00 Ea.	\$33,314.80	\$39,778.27	5.0000	5	5	\$198,891.35	\$198,891.35	
Repair flash tank 24 gallon	5	6.00 Ea.	\$2,769.45	\$3,466.88	10.0000	10	10	\$34,668.80	\$34,668.80	
Repair condensate meter	15	4.00 Ea.	\$6,164.25	\$7,152.57	3.3333	3	3	\$21,457.72	\$21,457.72	
			\$2,470,625.19	\$2,897,168.81				MR Subtotal	\$5,944,323.10	
									MR Per Year	\$118,886.46
									PM Total	\$60,400.22
									Subtotal	\$179,286.68
									Total Per Unit	\$186.27

FAC 8311 SEWAGE TREATMENT PLANT

SUC \$186.27

Release 2023 Qtr 4

UM KG

Zip Code Prefix 222

Design Life 50

Type PM

Average Size 962.53383

Description	Qty	Labor Hours	Bare Mat	Bare Labor	Bare Equip	Bare Total	Total In-House	Total Incl OP
Valve, sediment strainer, above 4", annualized	8.00	2.50	\$47.36	\$133.94	\$0.00	\$181.30	\$226.22	\$273.50
Duplex sump, annualized	4.00	6.62	\$107.27	\$355.78	\$0.00	\$463.05	\$580.51	\$703.33
Oxygen monitor, annualized	8.00	40.00	\$3,926.56	\$2,127.68	\$0.00	\$6,054.24	\$7,085.20	\$8,312.49
Deaerator tank, annualized	4.00	6.02	\$101.20	\$383.68	\$0.00	\$484.88	\$610.10	\$740.39
Pump, boiler fuel oil, annualized	2.00	2.46	\$195.32	\$156.09	\$0.00	\$351.40	\$417.76	\$493.89
Centrifugal, over 1 HP, annualized	4.00	4.78	\$33.19	\$256.37	\$0.00	\$289.56	\$369.79	\$451.68
Heat exchanger, steam, annualized	3.00	2.77	\$71.35	\$147.80	\$0.00	\$219.15	\$270.63	\$325.67
Valve, OS&Y, above 4", annually	8.00	1.27	\$33.11	\$68.02	\$0.00	\$101.13	\$124.84	\$150.22
Water heater, steam 2500 gal., annually	1.00	0.94	\$149.78	\$50.14	\$0.00	\$199.92	\$229.94	\$267.44
Valve, pressure relief, above 4", annualized	8.00	1.18	\$47.36	\$63.13	\$0.00	\$110.49	\$134.17	\$160.21
Controls, central system, electro/pneumatic, annualized	15.00	28.82	\$2,535.06	\$1,818.12	\$0.00	\$4,353.18	\$5,152.12	\$6,077.82
Backflow prevention device, up to 4", annualized	13.00	4.33	\$182.21	\$272.06	\$0.00	\$454.27	\$554.11	\$663.07
Switchboard, annualized	4.00	2.80	\$15.91	\$195.89	\$0.00	\$211.80	\$272.16	\$333.31
Panelboard, 225 A and above, annualized	2.00	0.88	\$44.00	\$60.83	\$0.00	\$104.83	\$127.48	\$152.33
Motor control center, over 400 A, annualized	8.00	3.11	\$176.01	\$214.45	\$0.00	\$390.46	\$472.39	\$563.13
Fire alarm annunciator system, annualized	1.00	11.05	\$163.44	\$695.92	\$0.00	\$859.36	\$1,084.48	\$1,317.78
Manual slide gate, annualized	6.00	9.10	\$62.00	\$474.05	\$0.00	\$536.04	\$684.46	\$835.97
Storage tank, ground level, annualized	3.00	2.17	\$59.29	\$112.81	\$0.00	\$172.10	\$211.87	\$254.61
Water flow meter, turbine, annualized	6.00	3.54	\$112.35	\$182.52	\$0.00	\$294.87	\$360.86	\$432.47
Pump, metering (slurry), annualized	4.00	3.71	\$107.91	\$192.66	\$0.00	\$300.57	\$369.16	\$443.14
Turbine well, annualized	6.00	35.09	\$765.62	\$1,825.20	\$0.00	\$2,590.82	\$3,214.95	\$3,877.35
Vertical lift, over 1 H.P., annualized	8.00	11.65	\$371.72	\$605.02	\$0.00	\$976.74	\$1,195.41	\$1,432.68
Filter plant, annualized	6.00	104.75	\$270.46	\$5,450.25	\$0.00	\$5,720.72	\$7,382.84	\$9,058.48
De-ionization, annualized	2.00	8.02	\$2,219.20	\$415.74	\$0.00	\$2,634.94	\$2,981.58	\$3,439.18
Reverse osmosis system, annualized	4.00	14.91	\$682.40	\$774.02	\$0.00	\$1,456.42	\$1,756.87	\$2,091.44
Chlorine detector, annualized	1.00	3.20	\$185.86	\$165.62	\$0.00	\$351.48	\$419.75	\$497.31
Ejector, sewage, annualized	2.00	1.91	\$98.48	\$98.86	\$0.00	\$197.34	\$236.85	\$281.28
Ejector pump, sump type, annualized	6.00	9.91	\$295.43	\$512.07	\$0.00	\$807.50	\$990.67	\$1,188.60
Sewage lift, over 1 H.P., annualized	12.00	17.47	\$366.17	\$907.53	\$0.00	\$1,273.70	\$1,582.57	\$1,909.76
Aerator, floating, annualized	12.00	61.63	\$499.32	\$3,194.10	\$0.00	\$3,693.42	\$4,701.58	\$5,734.71
Blower, aerator, annualized	2.00	20.62	\$488.22	\$1,064.70	\$0.00	\$1,552.92	\$1,921.16	\$2,313.80
Clarifier, annualized	2.00	10.79	\$156.73	\$557.70	\$0.00	\$714.43	\$897.41	\$1,088.23
Comminutor, annualized	2.00	5.42	\$70.74	\$280.54	\$0.00	\$351.28	\$442.51	\$537.29
Filter, trickling, annualized	6.00	6.80	\$178.92	\$352.37	\$0.00	\$531.29	\$654.89	\$787.44
Grit drive, annualized	12.00	13.04	\$466.03	\$674.31	\$0.00	\$1,140.34	\$1,389.24	\$1,661.44
Mixer, sewage, annualized	8.00	8.99	\$135.93	\$466.44	\$0.00	\$602.37	\$755.89	\$916.21
Fuel oil storage tank, above ground, annualized	1.00	3.28	\$23.44	\$169.84	\$0.00	\$193.29	\$246.58	\$301.05
Cathodic protection system, annualized	2.00	2.92	\$52.15	\$166.47	\$0.00	\$218.62	\$273.77	\$331.53
						\$41,140.22	\$50,382.78	\$60,400.22

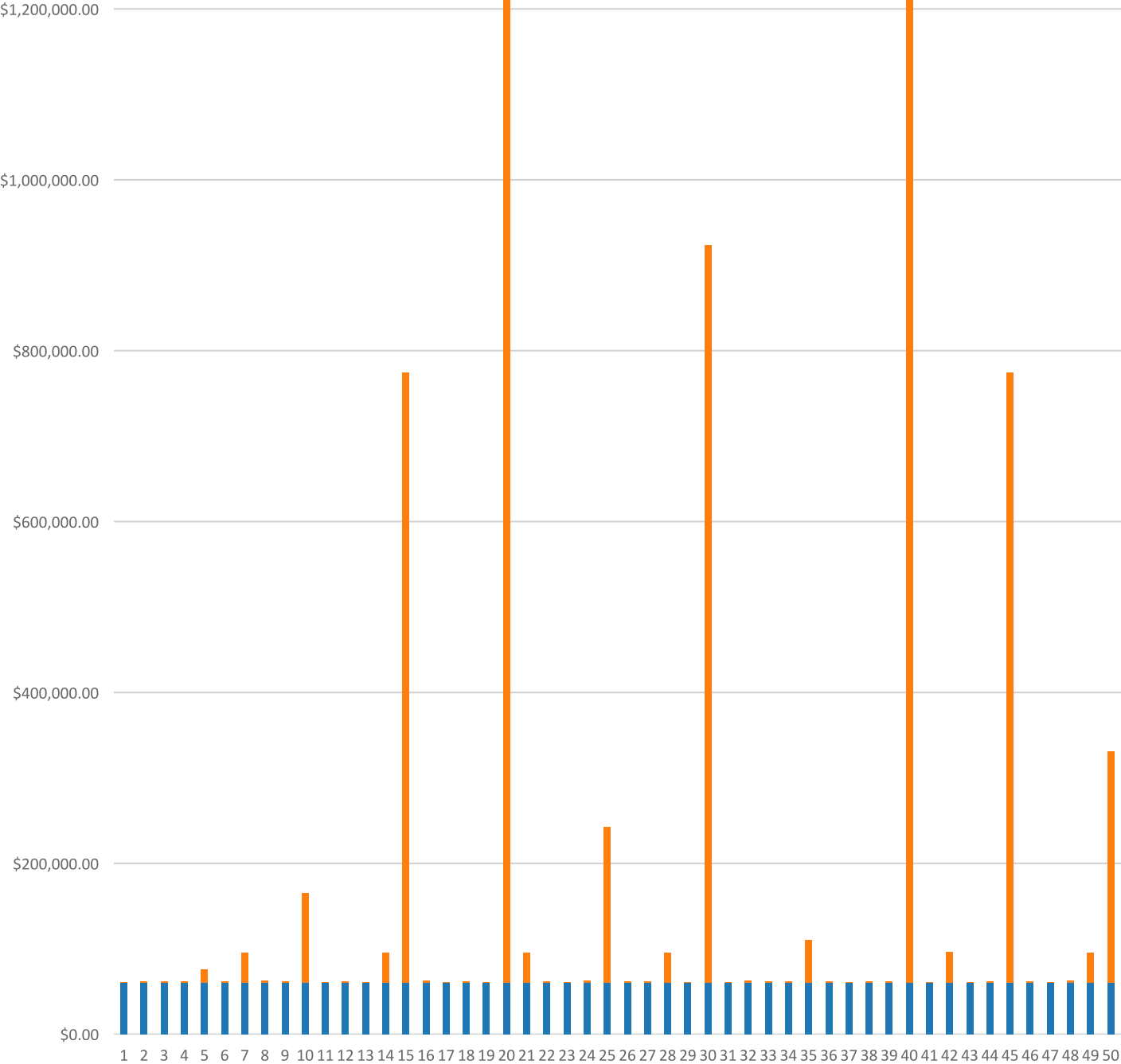
FAC 8311 SEWAGE TREATMENT PLANT

Modeled Component List

CostWorks Release 2023 Qtr 4

D20 Plumbing	
Compressed Air Systems, Compressors, 2 H.P.	4.0 Ea.
Rainwater Sump Pump	12.0 Ea.
B10 Superstructure	
Railing, Metal	680.0 L.F.
D30 HVAC	
Fuel Oil Storage Tank, 275 Gallon	4.0 Ea.
Valves	32.0 Ea.
Circulator Pump, 1 H.P.	20.0 Ea.
Deaerator	3.0 Ea.
D50 Electrical	
Load Center, 100 A, maintenance & inspection	6.0 Ea.
Load Center, 100 A, replacement	12.0 Ea.
Exit Light	2.0 Ea.
G30 Site Mechanical Utilities	
Ground Level Water Storage Tank 100K Gallon	1.0 Ea.
Storage Tank Ground Level, annualized	3.0 Each
Water Flow Meter, Turbine, annualized	6.0 Each
Vertical Lift, annualized	8.0 Each
Filter Plant, annualized	6.0 Each
Reverse Osmosis System, annualized	4.0 Each
Ejector Pump, annualized	6.0 Each
Sewage Lift, annualized	12.0 Each
Aerator, annualized	12.0 Each
Clarifier, annualized	2.0 Each
Comminutor, annualized	2.0 Each
Filter, annualized	6.0 Each
Grit Drive, annualized	12.0 Each
Sewage Mixer, annualized	8.0 Each
Fuel Oil Storage Tank, annualized	1.0 Each
G20 Site Improvements	
Gate, Manual slide, annualized	6.0 Each
G40 Site Electrical Utilities	
Cathodic Protection, annualized	2.0 Each

FAC 8311 SEWAGE TREATMENT PLANT
Sustainment by Year
CostWorks Release 2023 Qtr 4



PM Cost
MR Cost